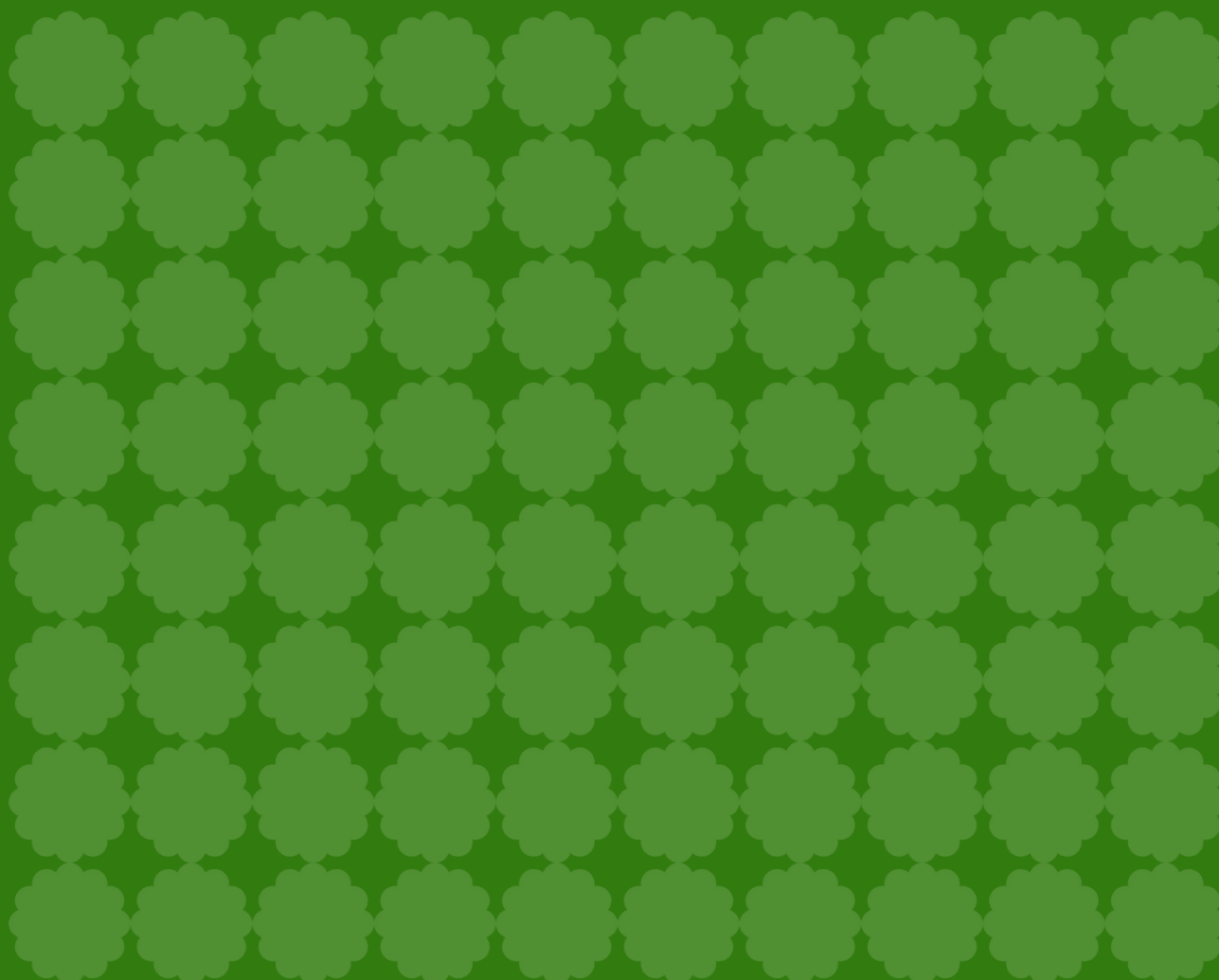


Greater Manchester Local Nature Recovery Strategy

Appendix 2 – Methodological Statement: Evidence used and processes undertaken



Introduction

The Greater Manchester Combined Authority (GMCA) has led the preparation of the Greater Manchester Local Nature Recovery Strategy (LNRS), through a stepped process, supported by the Greater Manchester Ecology Unit (GMEU), Natural England, the 10 Greater Manchester local authorities and the Peak District National Park Authority and the members of the Local Nature Recovery Strategy Steering and Officer Groups. The key steps followed in the preparation process are set out in the diagram below (Figure 1) and reflect the key components of the statutory guidance on the preparation of LNRS.

In this appendix, we provide further details and information about key parts of this process, including the development of habitat and species priorities and actions for the strategy and the mapping of opportunity areas

- Appendix 2a – The processes and evidence used to develop habitat priorities and actions
- Appendix 2b – The processes and evidence involved in developing the target species and actions
- Appendix 2c – The processes and key steps undertaken in mapping the Nature Network
- Appendix 2d – Longlist Species

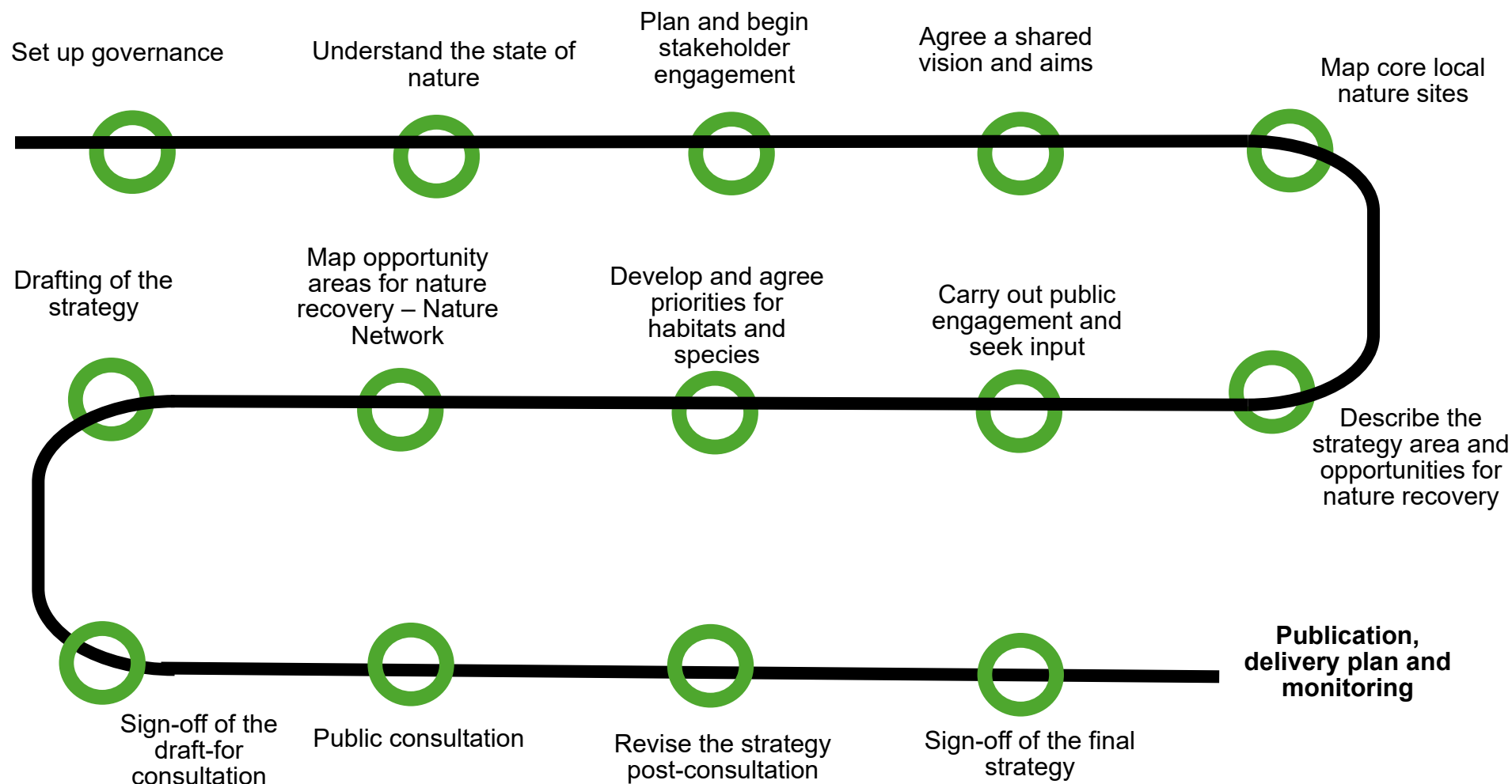


Figure 1. Key steps in developing the Greater Manchester Local Nature Recovery Strategy

Appendix 2a. The processes and evidence used to develop habitat priorities and actions

Priorities and actions

As per the Environment Act 2021, each LNRS must include:

- **Priorities** for biodiversity recovery or enhancement, considering contributions to other environmental benefits. These are the end results or outcomes that we all need to work towards.
- Proposals for potential **measures** (“actions”) related to those priorities. These are the measures we all need to undertake to try to achieve those end results or outcomes.

Following the Environment Act 2021, we set out priorities and actions within the strategy, building on the description of the strategy area, State of Nature report and opportunities for nature recovery.

Within the strategy, priorities and actions have been identified for different types of habitats and target species. The following sections outline the key inputs and steps followed to identify and develop the habitat priorities and actions for the LNRS.

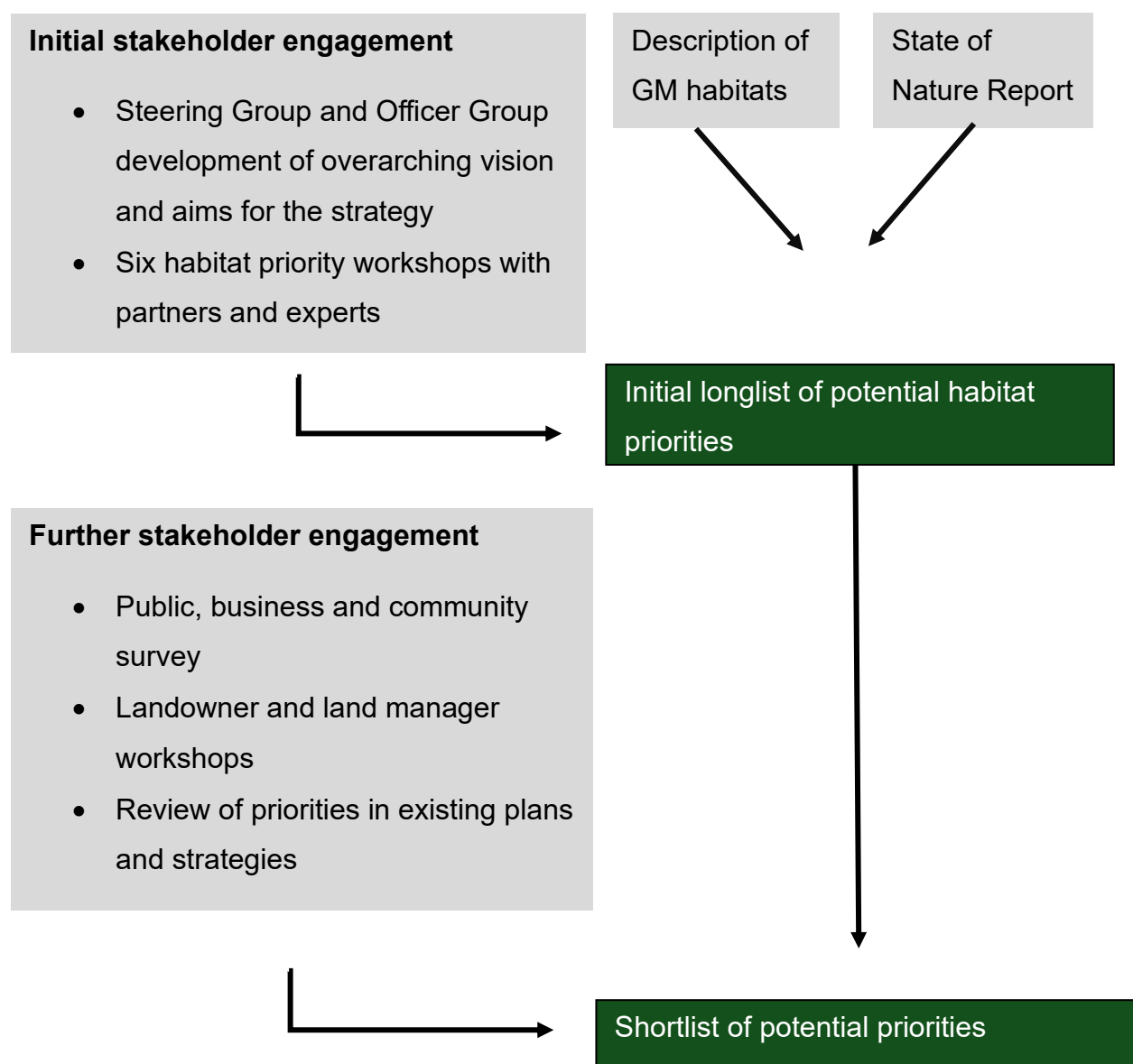
Approach to identifying habitat priorities and actions

The main inputs used to inform the identification and selection of habitat priorities and actions for the LNRS included:

- **Stakeholder input** – from multiple workshops with habitat experts, workshops with landowners/managers and responses to an open public survey.
- **Steering Group and Officer Group input** – feedback and sessions with the LNRS Steering and Officer groups.

- **Priorities in existing plans and strategies** – including all those listed below.
- **The State of Nature Report** – published in 2023 (see appendix 3).
- **Description of habitats** – see the main strategy text and appendix 6.
- **Opportunities for nature recovery identified for each habitat type** – identified from multiple habitat-based workshops.

These inputs informed, and were used throughout, a stepped process to develop the habitat priorities and actions. The diagram below condenses this process into a flow diagram (Figure 2). The key steps of which are expanded on further in the subsequent section.



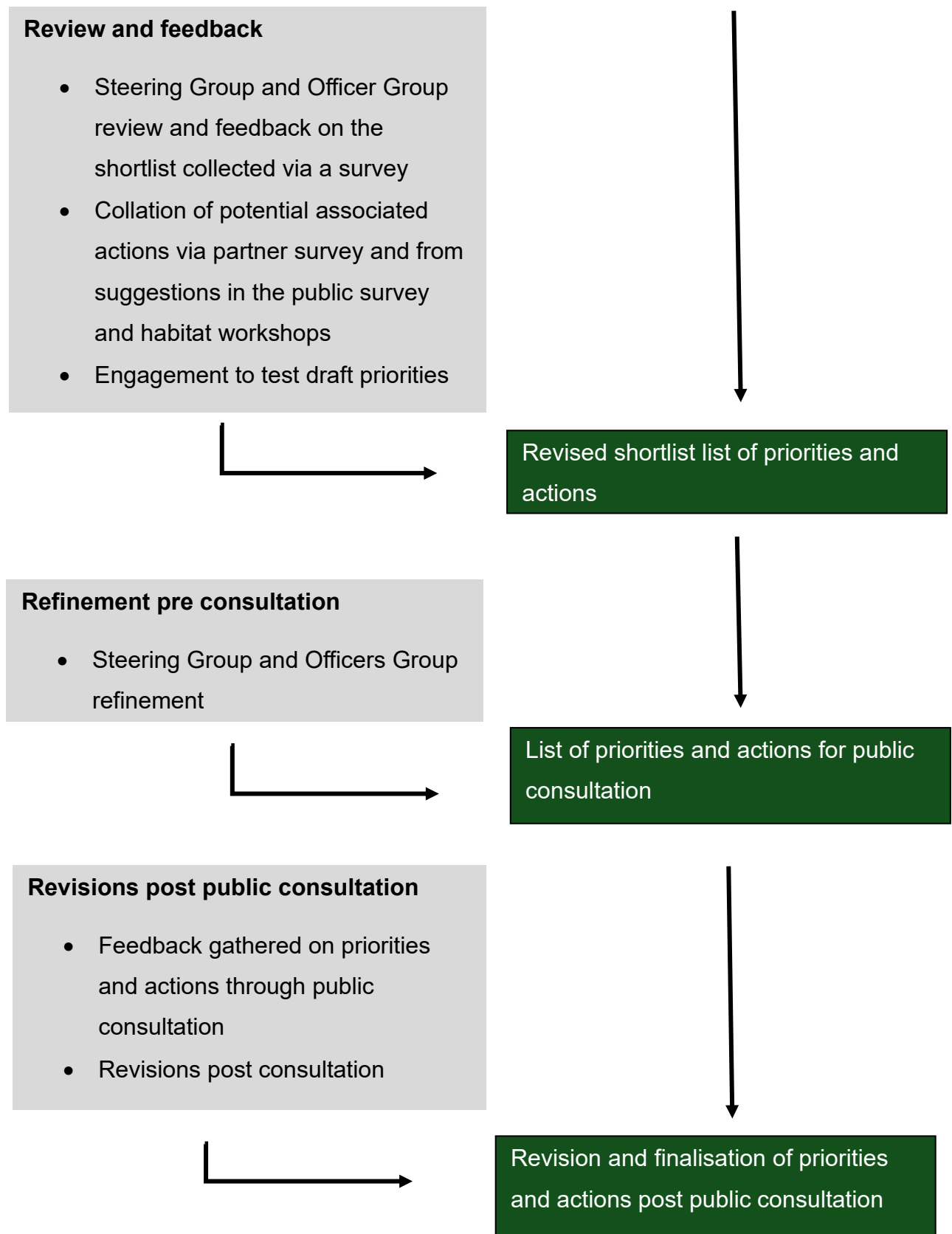


Figure 2. Process for developing habitat priorities and actions

List of existing strategies and plans used to inform the priorities and actions in the LNRS

The identification of opportunities, priorities and actions for the strategy were built upon a strong platform of existing plans and strategies which have already been published across Greater Manchester. All the documents listed below were reviewed when building our long list of priorities for nature recovery and helping to identify possible actions for priorities:

- Greater Manchester Biodiversity Action Plan (2008)
- An Ecological Framework for Greater Manchester (2009)
- Greater Manchester's Trees and Woodland Strategy (2018)
- Greater Manchester Forest Plan (2020-2029)
- Local Plans and Core Strategies
 - Bury Unitary Development Plan (1991)
 - Bolton Local Development Framework (2011)
 - Manchester Local Plan and Core Strategy (2012-2027)
 - Oldham Unitary Development Plan (2006) and Joint DPD (2011)
 - Rochdale Local Plan and Core Strategy (2016)
 - Salford Local Plan, Development Management Policies and Designations (2023)
 - Stockport Core Strategy (2011-2027)
 - Tameside Unitary Development Plan (2004)
 - Trafford Local Plan and Core Strategy (2012)
 - Wigan Local Plan and Core Strategy (2013) Wigan UDP [Written statement of retained policies] (2006)
- Climate Change Strategies
 - Bolton Climate change strategy (2021)
 - Wigan Climate change strategy (2020)
 - Rochdale's Climate change strategy and delivery plan- a partnership approach (2021 – 2025)
 - Stockport Climate Action Now (2019)
 - Tameside Carbon and Environment Strategy (2021)
- Local Biodiversity and Green Infrastructure strategies

- Manchester Our Rivers Our City (2021)
- Manchester's Great Outdoors - a green and blue infrastructure strategy for Manchester (2015-2018)
- Bolton Climate Change Strategy - A Joint Framework for Bolton to Act on (2021)
- Tameside Carbon & Environment Strategy (2021)
- Trafford Council Tree policy (2023)
- Bury Biodiversity Strategy (2023)
- Stockport's Ecological Network (2020)
- Oldham Council Green Infrastructure Strategy (2022)
- Manchester City Council Biodiversity Strategy (2022)
- Peak District National Park Authority Nature Recovery Plan (Draft 2024)
- Stockport Council Wildflower Grasslands (2021)
- Catchment Plans
 - Upper Mersey Catchment Plan (2021) and Lower Mersey Catchment Plan (2021)
 - Irwell Catchment Plan (2019)
 - Douglas Catchment Plan (2019)
- Places for Everyone (2023)
- Lancashire Wildlife Trust 2030 Strategy
- National Character Areas (NCA) profiles and objectives for all 6 NCA overlapping with Greater Manchester
- NHS Code Green - Delivering Net Zero carbon at Manchester University NHS Foundation Trust 2022-2025
- Greater Manchester NHS Green Plan

Key steps in the development of habitat priorities and actions

Initial longlist of potential habitat priorities and actions

The initial longlist of potential habitat priorities was informed and developed using a wide range of evidence and views, including the following main inputs:

- The overarching vision and aims for the LNRS developed with the LNRS Steering Group and Officer Group
- Engagement with key experts and stakeholders via six habitat workshops
- State of Nature Report and overview of the main pressures on nature
- Detailed description of landscape character and habitats (see appendix 6)
- LNRS pilot priorities

Shortlist of potential priorities and measures

The initial longlist of potential habitat priorities was then condensed to reduce any repetition and to ensure the priorities identified met the broad requirements of the LNRS regulations and statutory guidance. The statutory guidance highlights that LNRS priorities and actions should mainly focus on habitat enhancement and creation, and therefore many initial suggestions (e.g. research and monitoring) were outside the scope of the LNRS.

The initial longlist was also reviewed against priorities in existing plans, policies and strategies to identify and resolve any gaps and missing priorities.

Further stakeholder engagement on priorities was also undertaken and fed into the refinement and shortlisting of priorities and the identification of actions, including:

- A public survey, with over 800 responses from members of the public, community groups, landowners, environmental charities and local businesses
- Dedicated workshops with landowners and farmers
- Dedicated events and workshops for sectors such as health care, parks and business

Revised shortlist list of priorities and actions

The shortlist of potential priorities was then reshared with the LNRS Steering Group and Officer Group via a partner feedback survey, which enabled partner feedback on each of the priorities and provided an opportunity to input further suggested actions for each priority.

Feedback received through this survey was then used to revise the priorities and actions. Engagement events were also used to test some of the draft priorities and actions with stakeholders outside of the steering group.

List of priorities and actions for public consultation

The priorities and actions were subsequently reissued to the LNRS Steering Group and Officer Group after revisions had been made, with a further opportunity for final comments to be made. After this final review period, the draft priorities and actions for the strategy were finalised for the draft-for-consultation.

Public consultation

Feedback on the priorities was then requested through the public consultation. GMCA ran a public consultation on the draft LNRS from 15th November 2024 to 31st January 2025, which was open to all stakeholder groups and a requirement under the LNRS statutory national regulations and guidance. Residents and stakeholders could respond to the public consultation via a survey, available online or in paper copy, and providing comments via email. The public consultation received over 400 responses. During this period, GMCA ran numerous engagement events to promote the public consultation and encourage feedback on the aims, targets, priorities and maps in the strategy. Events included:

- 10 in-person drop in events in each of the local districts, with a total of over 180 attendees.
- Sector specific events for different audiences including young people, businesses, communities, water sector, farmers and land managers.
- A general webinar.
- A workshop for 125 attendees at the Green Summit in December 2024.

Please see appendix 9 and 10 for full details of the responses we received to the public consultation.

Revisions post public consultation

The public consultation indicated strong support for the priorities set out in the LNRS, with an average of 81% of respondents agreeing or strongly agreeing with the habitat priorities. The public consultation also provided the GMCA with comments and technical feedback on the priorities and actions. This feedback was reviewed, and the most common themes were taken forward as suggested revisions to the priorities and action, where within the remit and scope of a LNRS and endorsed by our Steering Group and Officer Group.

Proposed revisions to the priorities and actions, in response to feedback from the public consultation, were taken to the LNRS Steering Group and Officer Group for further discussion through a series of three workshops held in March 2025. The Steering Group and Officer Group provided their views on the proposed amendments. GMCA then made further amendments and finalised the priorities and actions, based on the proposed changes and the response from the Steering Group and Officer Group to these proposed changes.

Appendix 2b. The processes and evidence involved in developing the target species and actions

The species priorities were developed in parallel to the habitat priorities. We already know that working to enhance, create and connect habitats across Greater Manchester will be of huge benefit to many species. However, some species and groups of species are particularly at risk locally, and some need bespoke action beyond the wider habitat priorities set out in this strategy.

Under the national LNRS guidance, LNRSs should set out a manageable list of target species and species groups for focused attention to help these species recover and avoid local species loss – these should be understood as a local list of species requiring targeted action and in no way impacts upon the status of any other protected, priority or principal species list set out nationally, such as species listed under Section 41 of the Natural Environment and Rural Communities Act 2006. Instead, the LNRS process sought to identify species and groups of species particularly at risk locally and those in need of bespoke action.

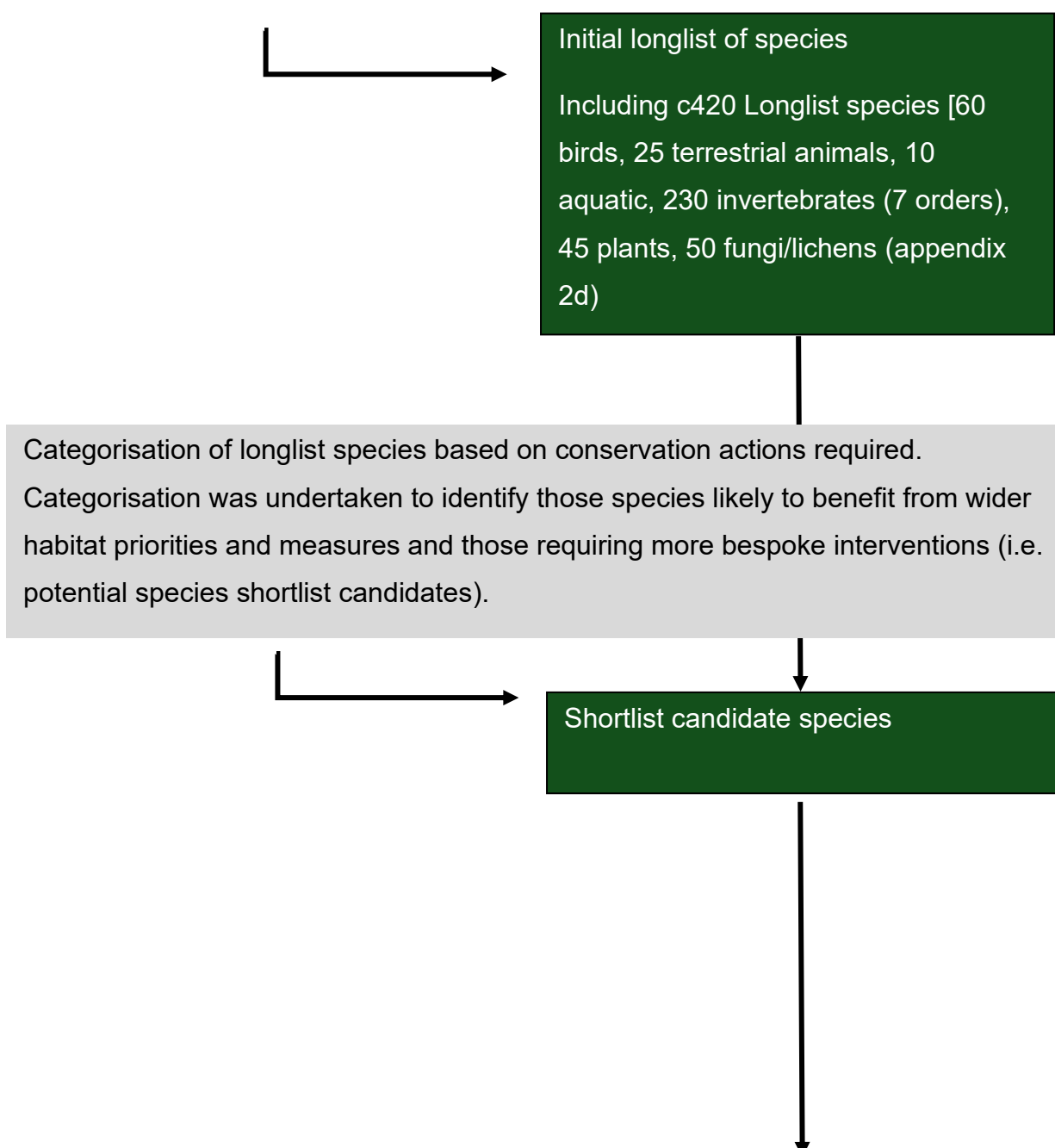
The selection process for the target species and species groups followed the national process set out by Natural England. Through working with local species experts, a list was initially agreed of over 400 vulnerable species which should benefit from the LNRS (see appendix 2d). From this list, 16 target species and species groups were then selected for bespoke action in this first iteration of the LNRS.

From this list, 16 target species and species groups were then selected for action in this first iteration of the LNRS. The diagram below condenses the process followed to select target species into a flow diagram. Further details are then provided on the selection criteria used to identify the 16 target species and species groups.

The target species and species group selection process involved the following steps with GMEU and a group of species experts from across Greater Manchester.

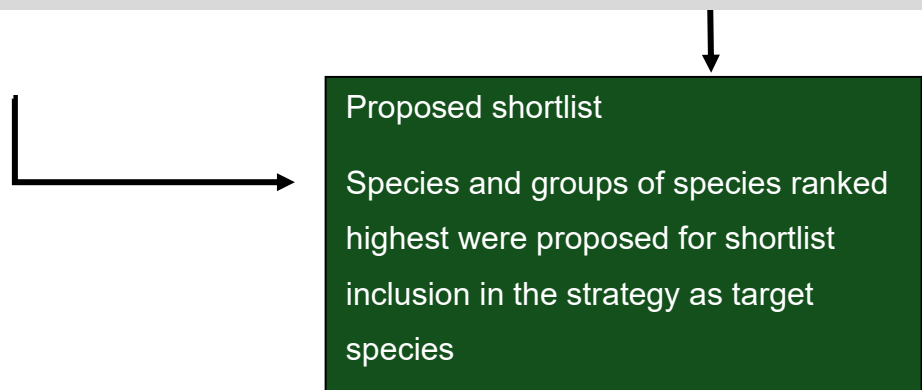
Creation of a local LNRS species long list of relevant threatened species for each taxonomic group by including:

- UK IUCN and BAP Section 41 UK species list
- Discussion and input from expert local species experts including country recorders, Lancashire Wildlife Trust, Natural England and Environment Agency

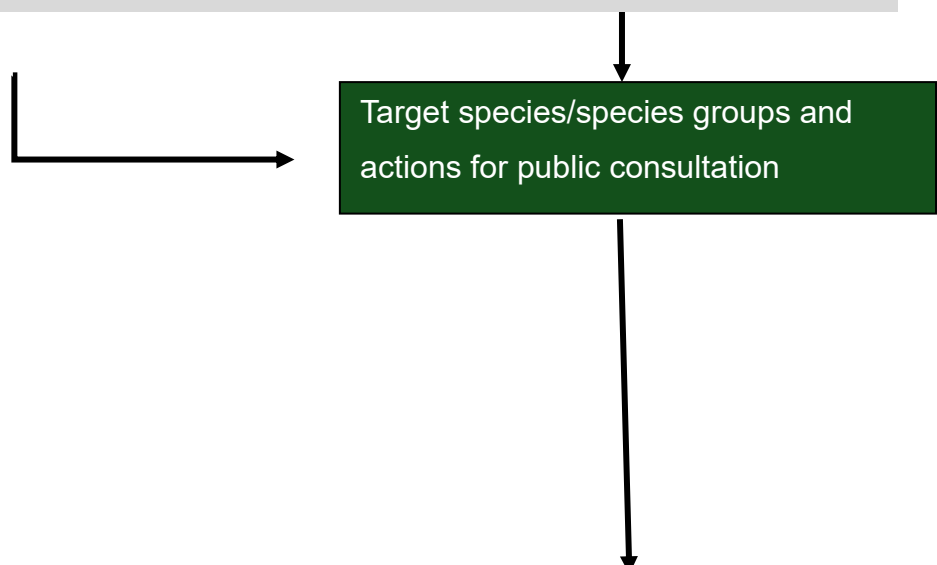


Ranking of shortlist candidate species to identify a manageable number for the strategy to prioritise. Each of the shortlist candidate species was ranked by local experts and species recorders to aid prioritisation, based on the following factors:

- urgency of action
- deliverability of conservation action
- national significance of the GM population
- biodiversity co-benefits
- environmental and social co-benefits
- climate change vulnerability.



Results of the ranking of candidate shortlisted species presented back to the species expert group (recorders and local experts, Natural England, Lancashire Wildlife Trust and the Environment Agency) for review and feedback and the addition of actions (measures) for each target species/species group.



Feedback on the target species and species groups gathered during the public consultation. Common comments were used to suggest proposed changes, that aligned with the national processes set out by Natural England and the scoring approach adopted by GMCA and GMEU. Proposed changes by GMCA were then discussed and reviewed by GMEU and Natural England before being actioned by GMCA.

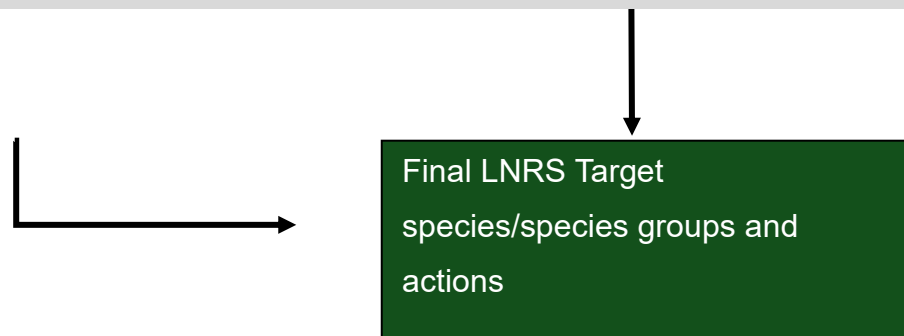


Figure 3. Process for selecting target species and target species groups

Selection criteria

The list of over 400 vulnerable species identified by the species experts were identified using the following criteria, and categorised to show the LNRS habitats relevant to them:

- **Conservation status:** Particularly threatened, vulnerable or endangered species (according to International Union for Conservation of Nature red lists, national red lists of species at risk of extinction or Biodiversity Action Plan Section 41 UK lists).
- **Local significance:** Species that are locally significant in Greater Manchester.

Key to the selection of the target from this list of vulnerable species was the use of a ranking approach to narrow down to a manageable list for bespoke action within the LNRS. The following factors informed this process:

- **Bespoke requirements:** Specific action required to aid these species recovery beyond the multiple habitat priorities set out in the LNRS.

- **Urgency:** Level of urgency of action needed to stabilise species loss.
- **Deliverability:** Feasibility of actions and whether actions could be delivered within Greater Manchester to aid recovery.
- **National significance:** National significance of the population in Greater Manchester.
- **Wider benefits:** Benefits for other species and wider ecosystem services, such as flood risk reduction or carbon sequestration.
- **Climate change:** Vulnerability to current and future climate change.

There are, of course, many vulnerable species beyond those that have been covered in the targeted species actions. The habitat priorities and actions will help conserve these species, and monitoring their populations will help assess whether other species should be prioritised for action in future updates to this strategy.

Appendix 2c. The processes and key steps undertaken in mapping the Nature Network for the LNRS

The Environment Act 2021 requires that all LNRS must identify and map:

- Areas of particular importance for biodiversity (APIBs), GMCA has referred to these as our “**core local nature sites**” within the text of the strategy
- Areas that could become of particular importance for biodiversity, or where the recovery or enhancement of biodiversity could make a particular contribution to other environmental benefits. They are where the responsible authority and local partners propose that effort should be concentrated to restore habitats to achieve the most for biodiversity and the wider environment. GMCA has referred to these as “**nature recovery opportunity areas**” or “**opportunity areas**” throughout the strategy

When brought together, GMCA has collectively referred to these two sets of mapped sites as the Greater Manchester Nature Network or “**Nature Network**”: for the purpose of the national LNRS regulations and statutory guidance this forms the Local Habitat Map for Greater Manchester. The subsequent sections provide further information on the evidence and processes used to develop these two mapped components of the LNRS, our Nature Network.

Methodology for identifying and mapping core local nature sites

These are our best remaining wildlife sites across the city-region and are already recognised for their importance for biodiversity (our “areas of particular importance for biodiversity”). The areas eligible for inclusion as core local nature sites are tightly defined by Defra, in national LNRS regulations and statutory guidance. This guidance sets out that the map should only include statutory and non-statutory designated or scheduled sites for nature conservation and irreplaceable habitats as

defined under Biodiversity Net Gain Regulations (2024). The intention behind this approach is to establish a nationally consistent baseline map.

Following national guidance, the map of core local nature sites for Greater Manchester contains only the follow types of sites and habitats:

- **Nationally designated sites** for their value to nature: including Sites of Special Scientific Interest (SSSI); Special Protected Areas (SPA), Special Areas of Conservation (SAC), National Nature Reserves (NNR);
- **Locally designated or scheduled sites** for their value to nature: Local Nature Reserves (LNR), locally designated Local Wildlife Sites (LWS) – the latter known locally as Sites of Biological Importance (SBI);
- **Irreplaceable habitats** as defined in the Biodiversity Gain Requirements (Irreplaceable Habitat) Regulations 2024¹. The habitats that meet the Biodiversity Gain Requirements definition, and are present, include: blanket bog, lowland fens, ancient woodland, ancient trees and veteran trees.

The datasets used to identify sites included in the core local nature sites are as set out in the table 1 below:

Table 1. Datasets used in the development of the LNRS core local nature sites map

Site or habitat for inclusion in Core Local Nature Sites LNRS Map (APIBs)	Source and datasets used
Sites of Special Scientific Interest	Natural England: Sites of Special Scientific Interest (England) - data.gov.uk
Special Protection Areas	Natural England: Special Protection Areas (England) - data.gov.uk
Special Areas of Conservation	Natural England: Special Area of Conservation (time series) - data.gov.uk
National Nature Reserves	Natural England: National Nature Reserves (England) - data.gov.uk
Local Nature Reserves	Natural England: Local Nature Reserves (England) - data.gov.uk

¹ [The Biodiversity Gain Requirements \(Irreplaceable Habitat\) Regulations 2024](#)

Sites of Biological Importance (including Local Wildlife Sites)	Greater Manchester Ecology Unit: Sites of Biological Importance (SBI / LWS) in Greater Manchester - data.gov.uk
Irreplaceable habitats: Blanket bog	Natural England (Priority Habitats Inventory): Priority Habitats Inventory (England) - data.gov.uk
Irreplaceable habitats: Lowland Fen	Natural England (Priority Habitats Inventory) - Priority Habitats Inventory (England) - data.gov.uk
Irreplaceable habitats: Ancient woodland	Natural England (Ancient Woodland Inventory) - Ancient Woodland (England) - data.gov.uk
Irreplaceable habitats: Ancient and veteran trees	Woodland Trust: Using the data - Ancient Tree Inventory

In some instances, stakeholders have notified us that habitats identified in the Priority Habitat Inventory (or PHI) are inaccurate and provided ecological survey evidence to support this. Where this evidence has been provided, and GMEU agrees with this evidence, the Priority Habitats Inventory has been amended on our LNRS core local nature site map. However, it has not been possible to check the accuracy of the PHI over Greater Manchester as a whole and therefore these amendments have only been made where we have been notified of an inaccuracy.

Methodology for identifying and mapping nature recovery opportunity areas

The nature recovery opportunity areas (our “areas which could become of particular importance for biodiversity”) are locations where taking action to enhance, restore or create different types of habitats (i.e. woodlands, grasslands, moorlands, waterbodies and wetlands) would expand and better connect our core local nature sites. By prioritising action in these areas, we can focus our efforts and resources where we can have the greatest impact on reconnecting our remaining wildlife-rich spaces. To identify opportunity areas for nature recovery, GMCA followed a stepped process involving ecological modelling and expert input. This stepped process was informed by the regulations and statutory guidance, along with the availability of local data, resources, tools and expertise.

The methodology adopted looked to meet the broad vision for the LNRS, as agreed with our Steering Group and Officer Group, to ‘deliver a resilient network for nature across the city-region, connecting and enhancing wild spaces so that people and nature can thrive’. The methodology set out below was presented to our Steering Group and Officer Group for comment prior to commencement. It is important to note that our mapping of nature recovery opportunity areas was predominantly habitat rather than species driven. This is based on the need to work towards a nature network that will benefit many species, rather than focusing on the specific conservation needs of a single species.

The subsequent sections provide details on each of the steps undertaken to develop and finalise the Nature Network maps.

Step 1. Identification and mapping of core local nature sites

The national LNRS statutory guidance highlights that opportunity areas should be targeted where they will join up or expand core local nature sites. The identification and mapping of core local nature sites formed a key first step for the subsequent identification of locations for nature recovery opportunity areas. The subsequent steps in the methodology focus on how to identify opportunity areas that would best connect core local nature sites to help establish a larger, more resilient network of high-quality joined up habitats.

Step 2. Creation of a land cover and land use map

After the identification of the core local nature sites, a key next step in informing the identification of opportunity areas was the development of a comprehensive land use and land cover map. The creation of a land cover and land use map enabled GMCA to understand the habitats and land use types that surrounded each of the core local nature sites. This information was then used to inform the identification of locations for the best potential corridors between them in subsequent steps of the process.

As there was no comprehensive UKHab² or Phase 1 habitat survey³ covering the whole of Greater Manchester, a bespoke land cover and land use map was created by combining land cover and land use datasets from several sources, using data with the highest confidence first, and then progressively filling any gaps with lower confidence data to ensure full coverage.

The datasets used to create the land cover and land use map are outlined in table 2 below, in order of confidence.

Table 2. List of datasets used in the creation of the land use land cover map

Data	Source
Rivers and streams, canals, ditches, standing water including ponds	Ordnance Survey National Geographic Database
Hedgelines (buffered by 1m)	Rural Payments Agency Hedgeline Inventory
Residential gardens	Ordnance Survey National Geographic Database
Buildings	Ordnance Survey National Geographic Database
Roads, paving, paths, transport curtilage, tracks, towing paths	Ordnance Survey National Geographic Database

² Ukhhab refers to the UK Habitat Classification, more information on this classification system is available on the ukhab website (external link): [ukhab – UK Habitat Classification](#)

³ Phase 1 Habitat Survey is a standard technique for recording habitats and ecological features within a site published by the Joint Nature Conservation Committee. Available on the JNCC website (external link) [Handbook for Phase 1 habitat survey](#)

Ancient woodland	Natural England Ancient Woodland Inventory
Broadleaved woodland, coniferous woodland, mixed woodland	Forestry Commission National Forest Inventory
Broadleaved woodland, mixed woodland, coniferous woodland	Ordnance Survey National Geographic Database
Rails, made surfaces, transport curtilage	Ordnance Survey National Geographic Database
Structures	Ordnance Survey National Geographic Database
Arable land	Rural Payments Agency Land Registry
Blanket bog, lowland raised bog, reedbeds, upland heathland, upland flushes fens & swamps, lowland heathland, lowland fens, traditional orchard	Natural England
Amenity land, religious grounds, cemeteries, parks, gardens, educational grounds, playing fields, golf courses, sports facilities, institutional grounds, allotments	Ordnance Survey MasterMap Greenspaces & NGD
Permanent grassland, scrub, woodlands, heathlands, tracks, farmyards, hard standings, streams, ditches, ponds	Rural Payments Agency Land Registry
Boulders, quarry, sand, shingle, exposed peat, bare earth or grass, modified grass, rough grass, scrub, marsh, heath, construction sites, landfill, made surfaces, swimming pools	Ordnance Survey National Geographic Database

3When incorporating each dataset into the map, the map was attributed with land cover and land use information. This was then rationalised down to classifications (inspired by UK Biodiversity Action Plan and UK Habitat classifications) with a few bespoke categories.

Table 4. Habitat categories used in the land cover land use map

Code	Habitat
g1	Acid Grassland
g2	Calcareous grassland
g3	Neutral grassland
(g4)	Modified grassland (Private)
(g5)	Modified grassland (Public)
(g6)	Sports and leisure
(g7)	Agricultural permanent grassland
(g8)	Transport and road verges
w1	Broadleaved and mixed woodland
w2	Coniferous woodland
h1	Dwarf shrub heath
h2	Hedgerows
h3	Dense scrub
f1	Upland Bog
f2	Fen, marsh and Swamp
c1	Arable and horticulture
u1	Urban made surface
(u2)	Residential gardens
(u3)	Transport infrastructure
(u4)	Buildings and structures

s1	Inland rock
s2	Supralittoral rock
s3	Supralittoral sediment
r1	Standing open water and canals
r2	Rivers and streams
t1	Littoral rock
t2	Littoral sediment

Step 3. Modelling an ecological network and expansion areas

Modelling software selection

The LNRS statutory guidance has a strong focus on identifying opportunity areas that will help build ecological connectivity, including identifying areas that are:

- Targeted to join up or expand existing core local nature sites, as this can help to establish larger, more resilient networks of high-quality habitat across the landscape.
- Areas which would achieve greater connectivity of similar biodiverse habitats across the landscape.

This focus on connectivity in the national LNRS statutory guidance is also reflected in the overarching vision of the LNRS ***‘to deliver a resilient network for nature across the city-region, connecting and enhancing wild spaces.’***

To identify areas where there are opportunities to help build better ecological connectivity, GMCA used an established ecological network modelling tool called Linkage Mapper⁴. The selection of Linkage Mapper was based on an independent review of a series of ecological modelling tools and software undertaken and tested for GMCA by Lancashire Wildlife Trust and Cheshire Wildlife Trust in early 2024. Through their research and testing, Linkage Mapper was identified as the best option

⁴ <https://linkagemapper.org/>

to model priority locations to boost ecological connectivity across Greater Manchester. Linkage Mapper was also selected by several other Responsible Authorities across North West England, including Liverpool City Region, Cheshire and Warrington and Lancashire.

Setting up parameters for the habitat connectivity modelling

Linkage Mapper operates by assessing the land cover (or habitat) types between our core local nature sites in terms of how difficult, or resistant, it will be for species to move across. This information is then used by the Linkage Mapper tool to identify the best routes for species to move between our core local nature sites. The Linkage Mapper tool does this by using a technique called 'least cost path ecological modelling', which assesses the difficulty or 'cost' to species to move across different land cover (or habitat) types. By assessing and identifying routes between core local nature sites that are more difficult for species to move across, for example due to lots of roads or built up urban areas, compared to routes that are less difficult for species to move across, for example areas with more semi-natural habitats, agricultural areas or woodlands, the Linkage Mapper tool is able to identify and suggest routes or corridors that would be better suited to build connectivity.

To identify priority corridors the Linkage Mapper tool required two inputs:

- The locations of our core local nature sites.
- A 'resistance surface' – representing how difficult it is for species to move across the different land covers that make up our city-region, based on land cover types.

To set up the specific resistance surface needed for the Linkage Mapper tool to operate, GMCA, supported by GMEU, first used academic research papers and then tailored these locally by building in expertise from local specialists and experts. We consulted local specialists and experts via a series of panels sessions to enable experts to rank the level of resistance or difficulty of different land cover types for species movement across the city-region. Our local expert panels included representatives from The University of Manchester, The Wildlife Trusts, Forestry Commission, City of Trees, GMEU, Natural England and other organisations from our LNRS steering group. This process was repeated for different species assemblages, to enable the modelling of separate networks for woodlands,

grasslands and wetlands. Examples of the difficulty rankings used in these panel sessions are shown in Table 4. The involvement of local experts enabled bespoke resistance values to be created specific to habitats here.

Table 4. Resistance categories used in the expert workshops

Category	Description	Resistance Value
Optimal	Excellent food and shelter	1
Good	Good food and shelter	3
Reasonable	Reasonable food and shelter	5
Poor	Lacking either food or shelter	10
Very poor	Few food and shelter	20
Very unsuitable	No or little food and shelter	50
Impermeable	Significant block or high risk of mortality	100

Our core local nature sites were also refined for use in the ecological modelling by removing linear sites, that are already inherently connected, such as designated canals (e.g. Rochdale, Bridgewater and Peak Forest Canals), and prioritising the most viable sites with the highest potential to deliver nature recovery based on size (over 2ha in size). This avoided the model trying to build connectivity to very small sites, with less potential to support nature recovery at the city-region scale needed to respond to the biodiversity emergency.

Outputs from the habitat connectivity modelling

Using both the locations of the core local nature sites and the resistance surface, Linkage Mapper toolkit was used to produce a series of suggested corridors or routes to expand and better connect our core local nature sites⁵. Examples of the input and outputs of the connectivity mapping process are illustrated below (Figure

⁵ Using the build network and map linkages tools with Linkage Mapper, centrality mapper extension was also used to identify those locations that are most important corridors for overall species movement.

4). These outputs were repeated to produce a general nature connectivity network, as well as dedicated woodland and grassland networks.

Some habitats are inherently more connected, including our rivers, waterbodies and canals, and our upland areas – network modelling was not required for these habitat types. Instead, all major rivers and canals were included in the network. For wetland areas, further processes were also undertaken, alongside the modelling to identify suitable conditions for the creation of wetland habitat, this included the consideration of factors such as underlying peat soils and land within or close to flood zones. In upland areas the majority of these are covered by core local nature sites, and the general network and water network was used to suggest priority areas to build connectivity between upland and lowland areas.

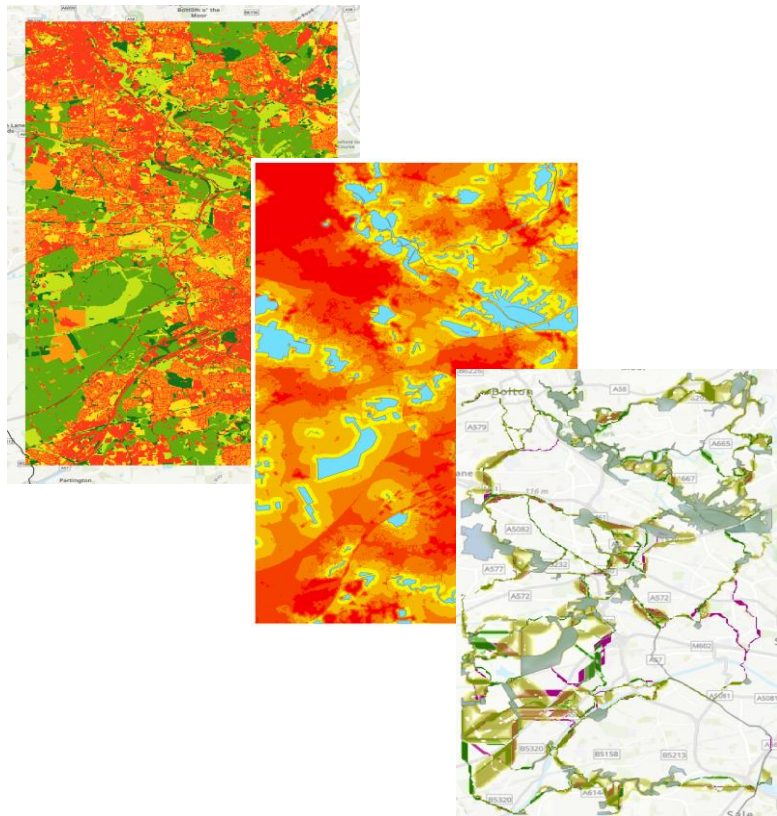


Figure 4. Example inputs and output from the ecological modelling process. Images show the resistance surface developed, the cost weighted distance developed to inform the mapping through Linkage Mapper around the Core Local Nature Site and an example of some of the test corridors outputted through the Linkage Mapper toolkit

Adding expansion areas

Alongside modelling, connectivity corridors, where there were opportunities to better connect our core local nature sites, we also modelled expansion zones around our

core local nature sites to reflect the importance of expanding these existing areas for nature. This was also undertaken using Linkage Mapper and taking a resistance-based approach to avoid the suggestion of expansion areas over inappropriate land covers and land use, such as roads or residential gardens. This resulted in variable expansion zones around most core local nature sites, where there is appropriate surrounding land cover and land use types.

Prioritising corridors areas

The outputs from Linkage Mapper included a number of possible corridors. Our next stage was to prioritise within these to help target action and attention towards those areas with the biggest potential to benefit species. To do this, the Linkage Mapper toolkit includes analysis tools designed to rank the relative importance of core sites and corridors for maintaining the overall Nature Network⁶. The least viable and least important corridors were dropped from the models to create maps showing our most important expansion zones and corridors. As a safeguard, we also visually assessed recent indicator species records from the Greater Manchester Local Record Centre to restore any important links that had been incorrectly dropped by the prioritisation tool.

The output from this stage included priority corridors for woodlands, grasslands, wetlands, rivers and waterbodies, upland areas, a general network and expansion zones.

Step 4. Refining opportunity areas with stakeholders

At this point, the corridors had been created objectively through modelling. Once a draft modelled network had been produced, it was then crucial to gather local views and expertise on the outputs, and to use local expertise to sense check, improve and amend the modelled Nature Network. To do this, the outputs were shared with members of the LNRS steering group and officer group through a series of area specific workshops covering different areas of Greater Manchester. These workshops, held over summer 2024, enabled stakeholders to interrogate the priority

⁶ Linkage Mapper's centrality mapper extension was run to identify those areas with the highest importance to the network i.e. those that are most important for keeping the network connected.

modelled corridors and expansion zones and allowed members of the steering group and officer group to propose additions and amends to the modelled outputs.

To ensure suggested additions to the corridors were targeted and fitted within the strategic purpose of the LNRS, a series of criteria were used to guide proposed additions and amendments put forward by members of the steering group and officer group, including:

- The addition of a **specific parcel** of land or site.
- The **location and coherence** of the proposed site addition **in relation to a core local nature sites** OR the **modelled corridors** e.g. partially within, adjacent, nearby or isolated.
- Whether the ambitions for the proposed site addition **met the purposes of the LNRS Nature Network**, e.g. to build connectivity for species movement by joining up or expanding good areas for nature, to create or enhance habitat and to focus effort where it would deliver the greatest benefits for nature.
- Whether the ambitions for the proposed site addition could be **aligned with the actions being mapped** for the LNRS. Please see section 5 for mapped and unmapped actions in the LNRS.
- The **size of the proposed site addition**, larger sites over 2ha were preferred to avoid the inclusion of small, fragmented areas.
- The **feasibility and likelihood of action** occurring on the proposed site e.g. whether work related to nature recovery has already started on the site, funding has been secured, landowner permission has been given or support for conservation works or a management plan is in place.

To try to ensure mutual agreement around additions to the Nature Network, members of the steering group and officer group were also asked to try to gather **multi-partner consensus** and support when proposing additions. The use of criteria was necessary to limit the coverage of the network and ensure it remained a targeted and practical tool to drive forward nature recovery over the next decade.

Alongside proposed site additions, site removals were also considered and put forward over the summer 2024 review period. There were two categories of removals:

- **Sites under construction or with agreed planning permission:** To ensure the feasibility and effectiveness of the Nature Network in prioritising and targeting areas where action for nature recovery could be taken, sites that were known to be under construction for development or where planning permission had been granted were removed from the Nature Network. The decision to remove these areas was based on the justification that the opportunity to use the evidence base provided by the Nature Network had been missed in these locations, as land use change was already underway or had been agreed. Removal of these sites was not based on site-by-site investigation but through the use of all sites marked as 'under construction' or 'planning permission agreed' on the 2023-24 Strategic Housing Land Availability Assessment (SHLAA), which is information collected by GMCA annually on land use change and planning status of land allocations.
- **Sites with potential for development in the future:** As the Nature Network is not a barrier to development or other land use on a site, nor does it provide any additional designations or restrictions on land use, the GMCA did not recommend the removal of further land from the Nature Network only on the basis that it could potentially be developed for housing, industry or employment in the future. However, some local authorities did request the removal of land considered unfeasible or where they were concerned regarding its inclusion. They did this in their role as Supporting Authorities for the preparation of Local Nature Recovery Strategies under the Environment Act 2021, regulations and statutory guidance. Sites were only removed or amended by GMCA at the explicit request of the relevant local authority.

Once the additions and removals were agreed, GMCA amended the Nature Network.

Step 5. Mapping actions

Once the amended Nature Network had been agreed, following guidance from Defra, GMCA then needed to map locations within the Nature Network where specific actions (measures) identified within the strategy could potentially take place. The mapping of actions is intended to suggest the most appropriate activities to take place at a location to benefit the network. However, site-specific investigation and local experts still need to be consulted and the habitat principles set out in the strategy need to be closely followed.

Selecting actions to map

The LNRS lists over 108 actions for the 27 habitat priorities in the strategy. Not all these actions were suitable for mapping. For example, non-location specific actions, such as those relating to behaviour change or those that would be similarly beneficial over a large area, were not selected as suitable for mapping. To determine if an action was suitable for mapping, all actions were assessed against the following criteria, based upon Defra's 'Mapping of Potential Measures' non-statutory LNRS guidance⁷:

Based on this guidance, we did not map actions that:

- Would not directly support habitat creation or improvement
- Would be similarly beneficial over large areas
- Would not be sufficiently impactful or would only be impactful if implemented at a very large scale
- Where there is no known suitable location or where identifying a location would be technically difficult to establish or subject to a high degree of error when mapping at a Greater Manchester scale
- Just highlight a general pressure
- Just promote changed behaviour
- Just improve understanding

This resulted in 26 measures to be mapped (see table 5 below)

Table 5. Actions mapped per broad habitat type in the LNRS

Broad habitat type	Mapped actions
Grasslands, Croplands and Pasture	<ul style="list-style-type: none">• Identify and safeguard remaining notable semi-natural grasslands.

⁷ Defra (2024) Mapping potential measures in Local Nature Recovery Strategies – advice for Responsible Authorities

	<ul style="list-style-type: none"> • Enhance and appropriately manage remaining semi-natural grasslands and lowland heath, including increasing species richness. • Creation or restoration of species-rich grasslands and lowland heath, particularly where they will expand or act as stepping stones or corridors. • Enhance and manage improved or semi-improved grasslands to boost species richness.
Lowlands, Wetlands and Mosslands	<ul style="list-style-type: none"> • Enhance, maintain and manage existing and remnant areas of lowland raised bog, fens and other wetland habitats over the long term, to improve diversity. • Enhance patchworks of semi-natural habitats surrounding our remaining lowland raised bog, fens and other wetland habitats to improve resilience. • Reintroduce lost species across a range of mossland and wetland communities. • Restore degraded wetland sites and areas of restorable deep peat, particularly where they will connect remaining wetland habitats. • Create more patchworks of wetland habitats and transitional habitats, particularly around remaining and restored lowland raised bog, fens and other wetland habitats.
<u>Rivers, Waterbodies and Canals</u>	<ul style="list-style-type: none"> • Make water channels more natural and complex, re-meander channels and reconnect to floodplains where feasible. • Enhance and maintain existing habitats within our waterbodies and adjacent grassland, wetland and woodland habitats to increase species richness. • Restore and maintain more natural riverbanks, in appropriate locations, and reduce invasive species. • Expansion, creation or restoration of a variety of waterside habitats, including woodlands, wetlands and meadows, where they will better connect existing habitats.

	<ul style="list-style-type: none"> • Improve mobility for aquatic creatures by removing barriers, daylighting buried or covered waterbodies or installing by-pass structures, where feasible. • Restoration and reconnection of habitats alongside canals, including targeted woodland creation and tree planting alongside canals. • Softening manmade canal banks using natural materials and native plants.
Upland, Moorland and Heath	<ul style="list-style-type: none"> • Stabilise, rewet and restore deep peat towards active blanket bog, where appropriate. • Encourage more diverse native vegetation and more flower-rich habitats, in appropriate places, on existing upland moorlands. • Create transitional habitats or corridors to increase linkage between our uplands and lowland habitats, where conditions allow. • Restore more naturalised wet areas, flushes and ponds. • Create rough, diverse grasslands around flushes and wetlands, wet in some areas with rushes around flushes and springs. • Encourage the restoration and regeneration of existing upland woodlands and clough woodlands.
Woodlands, Trees and Scrub	<ul style="list-style-type: none"> • Identify, safeguard and enhance ancient, long-established and designated woodlands, veteran and notable trees. • Enhance existing woodlands, scrub, and hedgerows through positive management, diversify them and increase their resilience to pests, disease and climate change. • Target native woodland and scrub creation or establishment where it will connect existing woodlands and scrub. • Expand existing woodland, scrub and other woodland fringe and transitional habitats.

Mapping actions to land parcels

The mapping of actions was undertaken at the land parcel scale (following the non-statutory guidance provided by Defra⁸) based on (i) the prioritised areas from the ecological connectivity modelling woodlands, grasslands, and wetlands, and areas identified for rivers and waterbodies and uplands, and (ii) the suitability of land parcels for the action based on the land cover and land use map.

To map actions to land parcels, the following process was broadly followed:

- **Priority locations:** Actions were only mapped within locations identified through steps 1-5 – the prioritised output areas from the ecological connectivity modelling woodlands, grasslands, and wetlands, and areas identified for rivers and waterbodies and uplands. For example, the actions for woodlands, trees, hedgerow and scrub were only mapped within the woodland connectivity corridors outputted after step 4 of the process. Similarly, the grassland, farmland and lowland heath actions were only mapped within the grassland connectivity corridors outputted after step 4 of the process.
- **Suitability by land cover:** Actions were assigned to suitable land cover types (see habitat codes in table 3) for that action. Relevant land cover types were selected depending on the actions described. For example, an action related to woodland enhancement would only be assigned to areas of existing or newly planted woodland, whereas actions on woodland creation would be assigned to land cover types such as amenity grassland. Suitable land cover types were determined on an action-by-action basis as advised by GMEU.
- **Suitability by land use:** The land use land cover map was then used to try to remove potentially unsuitable or unfeasible land parcels from being assigned actions to create or improve habitat. For example, using the land cover land use map, actions were deliberately not mapped over roads, buildings and other unsuitable land use types. Suitability was determined on an action-by-action basis e.g. a woodland measure would not be mapped over a waterbody; a

⁸ Defra (2024) Data Standards Advice for Local Nature Recovery Strategies - advice for Responsible Authorities

grassland measure would not be mapped over an existing woodland. The land use land cover map is based predominantly on national datasets (as set out in Step 2) and therefore will not be completely accurate in comparison to site specific and local knowledge. Therefore, although we have tried to remove unsuitable land parcels this will not be completely accurate, and in some cases may have removed suitable land parcels.

Through this process, mapped actions were added into the priority areas identified through steps 1-4 of the process. Several potential actions may exist in a single location, so overlaps within the dataset exist – this relates not just to suitability but also the limited land available for action.

Limitations to the mapping of actions

Due to the size of Greater Manchester and the limited time and resources available to the GMCA, it has not been possible to ground truth the mapped actions. When using the mapped actions, the habitat principles set out in section 5 of the LNRS should be followed, including the prioritisation of site level investigation and consultation of local experts, communities and following existing best practice and processes. The mapped actions should therefore be considered as a starting point, used in combination with local evidence and site investigations and what this tells us would be most beneficial for nature.

Step 6. Amends to the Nature Network post public consultation

Feedback on the Nature Network was received by GMCA through the public consultation on the LNRS (held between November 2024 and January 2025). Included within this feedback were suggested additions and amendments to the Nature Network. GMCA followed a criteria-based process, shown in Figure 5, and assessed each request individually. In some cases, the same site was submitted by multiple respondents – for these, only one assessment was undertaken for each individual site submitted. This criteria-based process enabled consistent decision-making on site additions requests received through the public consultation.

Requests for site removals were also made by landowners through the public consultation. Guided by national statutory guidance and regulations⁹, GMCA assessed each such requested removal in terms of whether the request would '*undermine the coherence and ambition of the strategy as a whole*'. If GMCA were satisfied that a requested removal would not '*undermine the coherence and ambition of the strategy as a whole*' then the requested removal was approved and undertaken.

⁹ See LNRS Statutory guidance paragraphs 88 and 89. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1146160/Local_nature_recovery_strategy_statutory_guidance.pdf

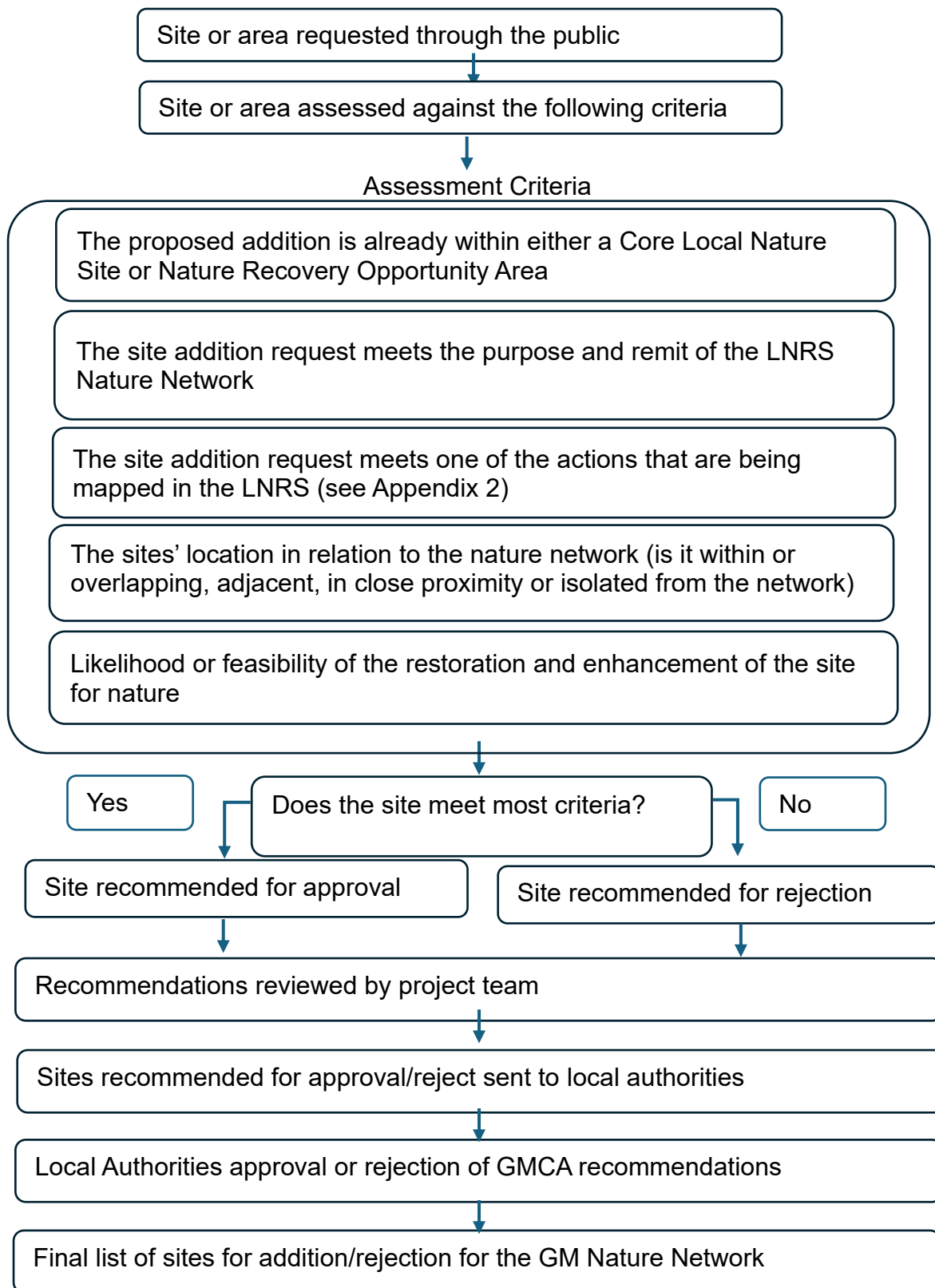


Figure 5. Assessment process for requested site additions received through the public consultation.

Step 7. Finalisation of the maps and creation of online access

Once amendments to the Nature Network had been undertaken, the revised nature network maps were then shared with the LNRS Steering Group and Officers Group for a final review period and then finalised.

An online GIS webpage was created to enable interactive engagement with the maps by the public and wider stakeholders and hosted on the GMCA website.

Appendix 2d – Longlist species

Taxon Group	Scientific Name	Common Name(s)	Red List inclusion status (CR, EN, NT, VU)	Other list status IF applicable	Local significance	Habitat assemblages (choose all that apply)	Primary Habitat assemblage
Bird	Podiceps nigricollis	Black-necked Grebe	Endangered (EN)			Rivers-Canals-Waterbodies Lowland Wetlands-Mosslands	Rivers-Canals-Waterbodies
Bird	Botaurus stellaris	Bittern	Vulnerable (VU)	UK BAP-Section41		Lowland Wetlands-Mosslands	Lowland Wetlands-Mosslands
Bird	Tadorna tadorna	Shelduck	Endangered (EN)			Lowland Wetlands-Mosslands	Lowland Wetlands-Mosslands
Bird	Anas crecca	Teal		GB red data/list	Rare breeder	Lowland Wetlands-Mosslands	Lowland Wetlands-Mosslands
Bird	Spatula querquedula	Garganey	Endangered (EN)			Lowland Wetlands-Mosslands	Lowland Wetlands-Mosslands
Bird	Spatula clypeata	Shoveler		GB red data/list	Rare breeder	Lowland Wetlands-Mosslands	Lowland Wetlands-Mosslands
Bird	Aythya ferina	Pochard	Vulnerable (VU)			Lowland Wetlands-Mosslands	Lowland Wetlands-Mosslands
Bird	Circus aeruginosus	Marsh Harrier		GB red data/list	Rare breeder	Lowland Wetlands-Mosslands Grassland-Cropland	Lowland Wetlands-Mosslands
Bird	Circus cyaneus	Hen Harrier	Endangered (EN)			Upland Moorland-Bogs-Heath	Upland Moorland-Bogs-Heath

Taxon Group	Scientific Name	Common Name(s)	Red List inclusion status (CR, EN, NT, VU)	Other list status IF applicable	Local significance	Habitat assemblages (choose all that apply)	Primary Habitat assemblage
Bird	<i>Accipiter gentilis</i>	Goshawk	Near Threatened (NT)			Woodlands-Hedgerows-Trees	Woodlands-Hedgerows-Trees
Bird	<i>Falco tinnunculus</i>	Kestrel	Vulnerable (VU)			Grassland-Cropland	Grassland-Cropland
Bird	<i>Falco columbarius</i>	Merlin	Endangered (EN)			Upland Moorland-Bogs-Heath	Upland Moorland-Bogs-Heath
Bird	<i>Falco subbuteo</i>	Hobby	Near Threatened (NT)			Lowland Wetlands-Mosslands Woodlands-Hedgerows-Trees	Lowland Wetlands-Mosslands
Bird	<i>Perdix perdix</i>	Grey Partridge	Vulnerable (VU)	UK BAP-Section41		Grassland-Cropland Upland Moorland-Bogs-Heath	Grassland-Cropland
Bird	<i>Coturnix coturnix</i>	Quail	Endangered (EN)			Grassland-Cropland	Grassland-Cropland
Bird	<i>Haematopus ostralegus</i>	Oystercatcher	Vulnerable (VU)			Rivers-Canals-Waterbodies Grassland-Cropland Urban (inc gardens)	Rivers-Canals-Waterbodies
Bird	<i>Charadrius hiaticula</i>	Ringed Plover	Near Threatened (NT)			Rivers-Canals-Waterbodies Urban (inc gardens)	Rivers-Canals-Waterbodies
Bird	<i>Pluvialis apricaria</i>	Golden Plover			Scarce breeder, declining	Upland Moorland-Bogs-Heath	Upland Moorland-Bogs-Heath
Bird	<i>Vanellus vanellus</i>	Lapwing	Vulnerable (VU)	UK BAP-Section41		Lowland Wetlands-Mosslands Grassland-Cropland Upland Moorland-Bogs-Heath	
Bird	<i>Calidris alpina</i>	Dunlin	Vulnerable (VU)			Upland Moorland-Bogs-Heath	Upland Moorland-Bogs-Heath
Bird	<i>Gallinago gallinago</i>	Snipe		GB red data/list	Scarce breeder	Lowland Wetlands-Mosslands Upland Moorland-Bogs-Heath	Upland Moorland-Bogs-Heath

Taxon Group	Scientific Name	Common Name(s)	Red List inclusion status (CR, EN, NT, VU)	Other list status IF applicable	Local significance	Habitat assemblages (choose all that apply)	Primary Habitat assemblage
Bird	<i>Scolopax rusticola</i>	Woodcock	Vulnerable (VU)			Woodlands-Hedgerows-Trees	Woodlands-Hedgerows-Trees
Bird	<i>Numenius arquata</i>	Curlew	Endangered (EN)	UK BAP-Section41		Grassland-Cropland Lowland Wetlands-Mosslands Upland Moorland-Bogs-Heath	Upland Moorland-Bogs-Heath
Bird	<i>Tringa totanus</i>	Redshank	Vulnerable (VU)			Lowland Wetlands-Mosslands Upland Moorland-Bogs-Heath	Lowland Wetlands-Mosslands
Bird	<i>Actitis hypoleucos</i>	Common Sandpiper	Near Threatened (NT)			Rivers-Canals-Waterbodies	Rivers-Canals-Waterbodies
Bird	<i>Larus argentatus</i>	Herring Gull		UK BAP-Section41	Declining	Urban (inc gardens)	Urban (inc gardens)
Bird	<i>Sterna hirundo</i>	Common Tern	Near Threatened (NT)			Rivers-Canals-Waterbodies	Rivers-Canals-Waterbodies
Bird	<i>Cuculus canorus</i>	Cuckoo	Vulnerable (VU)	UK BAP-Section41		Upland Moorland-Bogs-Heath Grassland-Cropland	Upland Moorland-Bogs-Heath
Bird	<i>Asio flammeus</i>	Short-eared Owl	Endangered (EN)			Upland Moorland-Bogs-Heath	Upland Moorland-Bogs-Heath
Bird	<i>Tyto alba</i>	Barn Owl		W&C/Protected	Quality indicator	Grassland-Cropland Upland Moorland-Bogs-Heath	Grassland-Cropland
Bird	<i>Streptopelia turtur</i>	Turtle Dove	Critically Endangered (CR)	UK BAP-Section41		Grassland-Cropland	Grassland-Cropland
Bird	<i>Caprimulgus europaeus</i>	Nightjar		UK BAP-Section41	Rare breeder	Lowland Wetlands-Mosslands Woodlands-Hedgerows-Trees	Lowland Wetlands-Mosslands
Bird	<i>Apus apus</i>	Swift	Endangered (EN)			Urban (inc gardens)	Urban (inc gardens)

Taxon Group	Scientific Name	Common Name(s)	Red List inclusion status (CR, EN, NT, VU)	Other list status IF applicable	Local significance	Habitat assemblages (choose all that apply)	Primary Habitat assemblage
Bird	<i>Alcedo atthis</i>	Kingfisher	Vulnerable (VU)			Rivers-Canals-Waterbodies	Rivers-Canals-Waterbodies
Bird	<i>Picus viridis</i>	Green Woodpecker	Near Threatened (NT)			Grassland-Cropland Woodlands-Hedgerows-Trees	Woodlands-Hedgerows-Trees
Bird	<i>Dryobates minor</i>	Lesser Spotted Woodpecker	Endangered (EN)			Woodlands-Hedgerows-Trees	Woodlands-Hedgerows-Trees
Bird	<i>Alauda arvensis</i>	Skylark		GB red data/list	Quality indicator	Grassland-Cropland Upland Moorland-Bogs-Heath	
Bird	<i>Hirundo rustica</i>	Swallow	Vulnerable (VU)			Grassland-Cropland	Grassland-Cropland
Bird	<i>Delichon urbicum</i>	House Martin	Near Threatened (NT)			Urban (inc gardens)	Urban (inc gardens)
Bird	<i>Motacilla flava</i>	Yellow Wagtail	Near Threatened (NT)	UK BAP-Section41		Grassland-Cropland Lowland Wetlands-Mosslands	Grassland-Cropland
Bird	<i>Motacilla cinerea</i>	Grey Wagtail	Near Threatened (NT)			Rivers-Canals-Waterbodies	Rivers-Canals-Waterbodies
Bird	<i>Cinclus cinclus</i>	Dipper	Near Threatened (NT)			Rivers-Canals-Waterbodies	Rivers-Canals-Waterbodies
Bird	<i>Phoenicurus ochrurus</i>	Black Redstart	Vulnerable (VU)			Urban (inc gardens)	Urban (inc gardens)
Bird	<i>Saxicola rubetra</i>	Whinchat	Near Threatened (NT)			Upland Moorland-Bogs-Heath	Upland Moorland-Bogs-Heath
Bird	<i>Oenanthe oenanthe</i>	Wheatear	Endangered (EN)			Upland Moorland-Bogs-Heath	Upland Moorland-Bogs-Heath

Taxon Group	Scientific Name	Common Name(s)	Red List inclusion status (CR, EN, NT, VU)	Other list status IF applicable	Local significance	Habitat assemblages (choose all that apply)	Primary Habitat assemblage
Bird	<i>Turdus viscivorus</i>	Mistle Thrush	Near Threatened (NT)			Woodlands-Hedgerows-Trees Urban (inc gardens)	Woodlands-Hedgerows-Trees
Bird	<i>Phylloscopus sibilatrix</i>	Wood Warbler	Vulnerable (VU)	UK BAP-Section41		Woodlands-Hedgerows-Trees	Woodlands-Hedgerows-Trees
Bird	<i>Turdus torquatus</i>	Ring Ouzel	Vulnerable (VU)	UK BAP-Section41		Upland Moorland-Bogs-Heath	Upland Moorland-Bogs-Heath
Bird	<i>Locustella naevia</i>	Grasshopper Warbler		UK BAP-Section41	Quality indicator	Lowland Wetlands-Mosslands Upland Moorland-Bogs-Heath	
Bird	<i>Acrocephalus schoenobaenus</i>	Sedge Warbler	Near Threatened (NT)			Lowland Wetlands-Mosslands Grassland-Cropland	Lowland Wetlands-Mosslands
Bird	<i>Muscicapa striata</i>	Spotted Flycatcher	Near Threatened (NT)	UK BAP-Section41		Woodlands-Hedgerows-Trees	Woodlands-Hedgerows-Trees
Bird	<i>Ficedula hypoleuca</i>	Pied Flycatcher	Near Threatened (NT)			Woodlands-Hedgerows-Trees	Woodlands-Hedgerows-Trees
Bird	<i>Poecile montanus</i>	Willow Tit	Endangered (EN)	UK BAP-Section41		Woodlands-Hedgerows-Trees Lowland Wetlands-Mosslands	Lowland Wetlands-Mosslands
Bird	<i>Corvus frugilegus</i>	Rook	Near Threatened (NT)			Grassland-Cropland Woodlands-Hedgerows-Trees	Grassland-Cropland
Bird	<i>Sturnus vulgaris</i>	Starling	Vulnerable (VU)	UK BAP-Section41		Grassland-Cropland Urban (inc gardens)	Grassland-Cropland
Bird	<i>Passer domesticus</i>	House Sparrow		UK BAP-Section41	Quality indicator	Urban (inc gardens) Grassland-Cropland	Urban (inc gardens)
Bird	<i>Passer montanus</i>	Tree Sparrow	Vulnerable (VU)	UK BAP-Section41		Grassland-Cropland	Grassland-Cropland

Taxon Group	Scientific Name	Common Name(s)	Red List inclusion status (CR, EN, NT, VU)	Other list status IF applicable	Local significance	Habitat assemblages (choose all that apply)	Primary Habitat assemblage
Bird	<i>Fringilla coelebs</i>	Chaffinch	Endangered (EN)			Grassland-Cropland Woodlands-Hedgerows-Trees	Woodlands-Hedgerows-Trees
Bird	<i>Chloris chloris</i>	Greenfinch	Endangered (EN)			Grassland-Cropland Woodlands-Hedgerows-Trees	Woodlands-Hedgerows-Trees
Bird	<i>Linaria flavirostris</i>	Twite	Endangered (EN)			Upland Moorland-Bogs-Heath	Upland Moorland-Bogs-Heath
Bird	<i>Linaria cannabina</i>	Linnet		GB red data/list	Quality indicator	Grassland-Cropland Upland Moorland-Bogs-Heath	Grassland-Cropland
Bird	<i>Acanthis flammea cabaret</i>	Lesser Redpoll		GB red data/list	Quality indicator	Woodlands-Hedgerows-Trees Upland Moorland-Bogs-Heath	Woodlands-Hedgerows-Trees
Bird	<i>Emberiza citrinella</i>	Yellowhammer		GB red data/list	Scarce breeder	Grassland-Cropland	Grassland-Cropland
Bird	<i>Emberiza calandra</i>	Corn Bunting	Near Threatened (NT)			Grassland-Cropland	Grassland-Cropland
Amphibian	<i>Bufo bufo</i>	Common Toad	Near Threatened (NT)			Rivers-Canals-Waterbodies Lowland Wetlands-Mosslands	Lowland Wetlands-Mosslands
Amphibian	<i>Triturus cristatus</i>	Great Crested Newt		UK BAP-Section41	Quality indicator	Rivers-Canals-Waterbodies Lowland Wetlands-Mosslands	Lowland Wetlands-Mosslands
Reptile	<i>Vipera berus</i>	Adder	Near Threatened (NT)			Upland Moorland-Bogs-Heath	Upland Moorland-Bogs-Heath
Reptile	<i>Anguis fragilis</i>	Slow-worm		UK BAP-Section41		Grassland-Cropland Lowland Wetlands-Mosslands	Grassland-Cropland
Reptile	<i>Natrix helvetica</i>	Grass snake		UK BAP-Section41		Lowland Wetlands-Mosslands	Lowland Wetlands-Mosslands

Taxon Group	Scientific Name	Common Name(s)	Red List inclusion status (CR, EN, NT, VU)	Other list status IF applicable	Local significance	Habitat assemblages (choose all that apply)	Primary Habitat assemblage
Reptile	<i>Zootoca vivipara</i>	Common (Viviparous) lizard		UK BAP-Section41		Upland Moorland-Bogs-Heath	Upland Moorland-Bogs-Heath
Terrestrial mammal	<i>Arvicola amphibius</i>	Water vole	Endangered (EN)			Rivers-Canals-Waterbodies Lowland Wetlands-Mosslands	Rivers-Canals-Waterbodies
Terrestrial mammal	<i>Sciurus vulgaris</i>	Red Squirrel	Endangered (EN)	UK BAP-Section41		Woodlands-Hedgerows-Trees	Woodlands-Hedgerows-Trees
Terrestrial mammal	<i>Erinaceus europaeus</i>	Hedgehog	Vulnerable (VU)	UK BAP-Section41		Urban (inc gardens) Woodlands-Hedgerows-Trees Grassland-Cropland	Urban (inc gardens)
Terrestrial mammal	<i>Muscardinus avellanarius</i>	Hazel Dormouse	Vulnerable (VU)	UK BAP-Section41		Woodlands-Hedgerows-Trees Grassland-Cropland	Woodlands-Hedgerows-Trees
Terrestrial mammal	<i>Micromys minutus</i>	Harvest Mouse	Near Threatened (NT)	UK BAP-Section41		Grassland-Cropland Lowland Wetlands-Mosslands	Grassland-Cropland
Terrestrial mammal	<i>Lepus timidus</i>	Mountain Hare	Near Threatened (NT)	UK BAP-Section41		Upland Moorland-Bogs-Heath	Upland Moorland-Bogs-Heath
Terrestrial mammal	<i>Martes martes</i>	Pine Marten		UK BAP-Section41		Woodlands-Hedgerows-Trees	Woodlands-Hedgerows-Trees
Terrestrial mammal	<i>Mustela putorius</i>	Polecat		UK BAP-Section41		Woodlands-Hedgerows-Trees Lowland Wetlands-Mosslands Grassland-Cropland Urban (inc gardens)	Lowland Wetlands-Mosslands
Terrestrial mammal	<i>Lepus europaeus</i>	Brown Hare		UK BAP-Section41		Grassland-Cropland Upland Moorland-Bogs-Heath	Grassland-Cropland
Terrestrial mammal (bat)	<i>Pipistrellus nathusii</i>	Nathusius' pipistrelle bat	Near Threatened (NT)		GM Rare	Rivers-Canals-Waterbodies Woodlands-Hedgerows-Trees	Rivers-Canals-Waterbodies

Taxon Group	Scientific Name	Common Name(s)	Red List inclusion status (CR, EN, NT, VU)	Other list status IF applicable	Local significance	Habitat assemblages (choose all that apply)	Primary Habitat assemblage
						Lowland Wetlands-Mosslands-Ponds	
Terrestrial mammal (bat)	Eptesicus serotinus	Serotine bat	Vulnerable (VU)		GM Rare	Grassland-Cropland Woodlands-Hedgerows-Trees Urban (inc gardens)	Grassland-Cropland
Terrestrial mammal (bat)	Barbastella barbastellus	Barbastelle bat	Vulnerable (VU)	UK BAP-Section41	GM feasible	Woodlands-Hedgerows-Trees	Woodlands-Hedgerows-Trees
Terrestrial mammal (bat)	Nyctalus noctula	Noctule / Nyctalus bat		UK BAP-Section41		Woodlands-Hedgerows-Trees Grassland-Cropland	Grassland-Cropland
Terrestrial mammal (bat)	Pipistrellus pygmaeus	Soprano pipistrelle bat		UK BAP-Section41		Urban (inc gardens)	Urban (inc gardens)
Terrestrial mammal (bat)	Plecotus auritus	Brown long-eared bat		UK BAP-Section41		Woodlands-Hedgerows-Trees Grassland-Cropland Urban (inc gardens)	Woodlands-Hedgerows-Trees
Terrestrial mammal (bat)	Rhinolophus hipposideros	Lesser horseshoe bat		UK BAP-Section41	GM feasible	Woodlands-Hedgerows-Trees Rivers-Canals-Waterbodies	Woodlands-Hedgerows-Trees
Lepidoptera - butterfly	Satyrion w-album	White-letter Hairstreak	Endangered (EN)	UK BAP-Section41		Woodlands-Hedgerows-Trees	Woodlands-Hedgerows-Trees
Lepidoptera - butterfly	Lasiommata megera	Wall	Near Threatened (NT)	UK BAP-Section41		Grassland-Cropland Upland Moorland-Bogs-Heath	Upland Moorland-Bogs-Heath
Lepidoptera - butterfly	Erynnis tages	Dingy Skipper	Vulnerable (VU)	UK BAP-Section41		Grassland-Cropland Woodlands-Hedgerows-Trees	Woodlands-Hedgerows-Trees
Lepidoptera - butterfly	Coenonympha pamphilus	Small Heath	Vulnerable (VU)	UK BAP-Section41		Upland Moorland-Bogs-Heath	Upland Moorland-Bogs-Heath
Lepidoptera - butterfly	Coenonympha tullia	Large Heath	Endangered (EN)	UK BAP-Section41		Lowland Wetlands-Mosslands	Lowland Wetlands-Mosslands

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Lepidoptera - butterfly	Speyeria aglaja	Dark Green Fritillary	Near Threatened (NT)			Upland Moorland-Bogs-Heath	Upland Moorland-Bogs-Heath
Lepidoptera - butterfly	Lycaena phlaeas	Small Copper			Scarce	Grassland-Cropland Upland Moorland-Bogs-Heath	Upland Moorland-Bogs-Heath
Lepidoptera - butterfly	Polyommatus icarus	Common Blue			Scarce	Grassland-Cropland	Grassland-Cropland
Lepidoptera - moth	Micropterix aureatella				NW declining	Lowland Wetlands-Mosslands-Ponds	Lowland Wetlands-Mosslands-Ponds
Lepidoptera - moth	Hepialus humuli	Ghost Moth		UK BAP-Section41	NW declining	Grassland-Cropland	Grassland-Cropland
Lepidoptera - moth	Trifurcula cryptella			GB red data/list	Nationally Scarce A	Grassland-Cropland	Grassland-Cropland
Lepidoptera - moth	Trifurcula eurema			GB red data/list	provRedDB3	Grassland-Cropland	Grassland-Cropland
Lepidoptera - moth	Pseudopostega crepusculella			GB red data/list	Nationally Scarce B	Lowland Wetlands-Mosslands-Ponds	Lowland Wetlands-Mosslands-Ponds
Lepidoptera - moth	Nematopogon pilella			GB red data/list	Nationally Scarce A	Upland Moorland-Bogs-Heath	Upland Moorland-Bogs-Heath
Lepidoptera - moth	Incurvaria praelatella				NW declining	Woodlands-Hedgerows-Trees	Woodlands-Hedgerows-Trees
Lepidoptera - moth	Lampronia fuscata			GB red data/list	Nationally Scarce B	Lowland Wetlands-Mosslands-Ponds	Lowland Wetlands-Mosslands-Ponds

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Lepidoptera - moth	Diplodoma laichartingella				NW declining	Lowland Wetlands-Mosslands-Ponds	Lowland Wetlands-Mosslands-Ponds
Lepidoptera - moth	Nemaxera betulinella			GB red data/list	Nationally Scarce B	Woodlands-Hedgerows-Trees	Woodlands-Hedgerows-Trees
Lepidoptera - moth	Psychoides verhuella				NW declining	Woodlands-Hedgerows-Trees	Woodlands-Hedgerows-Trees
Lepidoptera - moth	Caloptilia alchimiella				NW declining	Woodlands-Hedgerows-Trees	Woodlands-Hedgerows-Trees
Lepidoptera - moth	Glyphipterix haworthana				NW declining	Lowland Wetlands-Mosslands-Ponds	Lowland Wetlands-Mosslands-Ponds
Lepidoptera - moth	Denisia albimaculea			GB red data/list	provRedDB3	Urban (inc gardens)	Urban (inc gardens)
Lepidoptera - moth	Pleurota bicostella				NW declining	Upland Moorland-Bogs-Heath	Upland Moorland-Bogs-Heath
Lepidoptera - moth	Amphisbatis incongruella			GB red data/list	Nationally Scarce A	Lowland Wetlands-Mosslands-Ponds	Lowland Wetlands-Mosslands-Ponds
Lepidoptera - moth	Exaeretia allisella			GB red data/list	Nationally Scarce A	Grassland-Cropland	Grassland-Cropland
Lepidoptera - moth	Agonopterix carduella			GB red data/list	Nationally Scarce B	Grassland-Cropland	Grassland-Cropland
Lepidoptera - moth	Agonopterix subpropinquella				NW declining	Grassland-Cropland	Grassland-Cropland

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Lepidoptera - moth	<i>Aproaerema cinctella</i>			GB red data/list		Grassland-Cropland	Grassland-Cropland
Lepidoptera - moth	<i>Monochroa suffusella</i>			GB red data/list	pRDB3	Lowland Wetlands-Mosslands-Ponds	Lowland Wetlands-Mosslands-Ponds
Lepidoptera - moth	<i>Gelechia cuneatella</i>			GB red data/list	pRDB1	Lowland Wetlands-Mosslands-Ponds	Lowland Wetlands-Mosslands-Ponds
Lepidoptera - moth	<i>Teleiodes luculella</i>				NW declining	Woodlands-Hedgerows-Trees	Woodlands-Hedgerows-Trees
Lepidoptera - moth	<i>Pseudotelphusa paripunctella</i>			GB red data/list	Nationally Scarce B	Lowland Wetlands-Mosslands-Ponds	Lowland Wetlands-Mosslands-Ponds
Lepidoptera - moth	<i>Coleophora siccifolia</i>			GB red data/list	Nationally Scarce B	Woodlands-Hedgerows-Trees	Woodlands-Hedgerows-Trees
Lepidoptera - moth	<i>Coleophora orbitella</i>			GB red data/list	Nationally Scarce B	Lowland Wetlands-Mosslands-Ponds	Lowland Wetlands-Mosslands-Ponds
Lepidoptera - moth	<i>Coleophora currucipennella</i>			GB red data/list	pRDB3	Woodlands-Hedgerows-Trees	Woodlands-Hedgerows-Trees
Lepidoptera - moth	<i>Elachista rufocinerea</i>				NW declining	Grassland-Cropland	Grassland-Cropland
Lepidoptera - moth	<i>Elachista freyerella</i>				NW declining	Grassland-Cropland	Grassland-Cropland
Lepidoptera - moth	<i>Chrysoclista linneella</i>			GB red data/list	Nationally Scarce B	Urban (inc gardens)	Urban (inc gardens)

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Lepidoptera - moth	Chrysoclista lathamella			GB red data/list	pRDB2	Woodlands-Hedgerows-Trees	Woodlands-Hedgerows-Trees
Lepidoptera - moth	Stathmopoda pedella			GB red data/list		Woodlands-Hedgerows-Trees	Woodlands-Hedgerows-Trees
Lepidoptera - moth	Hellinsia lienigianus			GB red data/list	Nationally Scarce B	Grassland-Cropland	Grassland-Cropland
Lepidoptera - moth	Philedone gerningana				NW declining	Lowland Wetlands-Mosslands-Ponds	Lowland Wetlands-Mosslands-Ponds
Lepidoptera - moth	Archips xylostearia				NW declining	Woodlands-Hedgerows-Trees	Woodlands-Hedgerows-Trees
Lepidoptera - moth	Archips rosana				NW declining	Woodlands-Hedgerows-Trees	Woodlands-Hedgerows-Trees
Lepidoptera - moth	Clepsia senecionana				NW declining	Lowland Wetlands-Mosslands-Ponds	Lowland Wetlands-Mosslands-Ponds
Lepidoptera - moth	Neosphaleroptera nubilana				NW declining	Woodlands-Hedgerows-Trees	Woodlands-Hedgerows-Trees
Lepidoptera - moth	Eana osseana				NW declining	Lowland Wetlands-Mosslands-Ponds	Lowland Wetlands-Mosslands-Ponds
Lepidoptera - moth	Eana incanana				NW declining	Woodlands-Hedgerows-Trees	Woodlands-Hedgerows-Trees

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Lepidoptera - moth	<i>Acleris holmiana</i>				NW declining	Woodlands-Hedgerows-Trees	Woodlands-Hedgerows-Trees
Lepidoptera - moth	<i>Eulia ministrana</i>				NW declining	Woodlands-Hedgerows-Trees	Woodlands-Hedgerows-Trees
Lepidoptera - moth	<i>Hysterophora maculosana</i>				NW declining	Woodlands-Hedgerows-Trees	Woodlands-Hedgerows-Trees
Lepidoptera - moth	<i>Gynnidomorpha alismana</i>			GB red data/list	Nationally Scarce B	Rivers-Canals-Waterbodies	Rivers-Canals-Waterbodies
Lepidoptera - moth	<i>Hedya ochroleucana</i>				NW declining	Woodlands-Hedgerows-Trees	Woodlands-Hedgerows-Trees
Lepidoptera - moth	<i>Phiaris schulziana</i>				NW declining	Lowland Wetlands-Mosslands-Ponds	Lowland Wetlands-Mosslands-Ponds
Lepidoptera - moth	<i>Epinotia trigonella</i>				NW declining	Lowland Wetlands-Mosslands-Ponds	Lowland Wetlands-Mosslands-Ponds
Lepidoptera - moth	<i>Dichrorampha sedatana</i>			GB red data/list	Nationally Scarce B	Grassland-Cropland	Grassland-Cropland
Lepidoptera - moth	<i>Cossus cossus</i>	Goat Moth		UK BAP-Section41	NW declining	Woodlands-Hedgerows-Trees	Woodlands-Hedgerows-Trees
Lepidoptera - moth	<i>Synanthedon culiciformis</i>	Large Red-belted Clearwing		GB red data/list	Nationally Scarce	Lowland Wetlands-Mosslands-Ponds	Lowland Wetlands-Mosslands-Ponds

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Lepidoptera - moth	<i>Synanthedon vespiformis</i>	Yellow-legged Clearwing		GB red data/list	Nb	Woodlands-Hedgerows-Trees	Woodlands-Hedgerows-Trees
Lepidoptera - moth	<i>Synanthedon tipuliformis</i>	Currant Clearwing		GB red data/list	Nb	Urban (inc gardens)	Urban (inc gardens)
Lepidoptera - moth	<i>Cryptoblabes bistriga</i>				NW declining	Woodlands-Hedgerows-Trees	Woodlands-Hedgerows-Trees
Lepidoptera - moth	<i>Apomyelois bistriatella</i>			GB red data/list		Upland Moorland-Bogs-Heath	Upland Moorland-Bogs-Heath
Lepidoptera - moth	<i>Anania terrealis</i>			GB red data/list		Grassland-Cropland	Grassland-Cropland
Lepidoptera - moth	<i>Crambus hamella</i>			GB red data/list		Lowland Wetlands-Mosslands-Ponds	Lowland Wetlands-Mosslands-Ponds
Lepidoptera - moth	<i>Agriphila latistria</i>				NW declining	Grassland-Cropland	Grassland-Cropland
Lepidoptera - moth	<i>Watsonalla binaria</i>	Oak Hook-tip		UK BAP-Section41	NMRS Atlas - VU	Woodlands-Hedgerows-Trees	Woodlands-Hedgerows-Trees
Lepidoptera - moth	<i>Lasiocampa quercus</i>	Oak Eggar			NW declining	Woodlands-Hedgerows-Trees	Woodlands-Hedgerows-Trees
Lepidoptera - moth	<i>Idaea muricata</i>	Purple-bordered Gold		GB red data/list	Nationally Scarce	Lowland Wetlands-Mosslands-Ponds	Lowland Wetlands-Mosslands-Ponds
Lepidoptera - moth	<i>Orthonama vittata</i>	Oblique Carpet		UK BAP-Section41		Woodlands-Hedgerows-Trees	Woodlands-Hedgerows-Trees

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Lepidoptera - moth	<i>Epirrhoe galiata</i>	Galium Carpet		UK BAP-Section41		Upland Moorland-Bogs-Heath	Upland Moorland-Bogs-Heath
Lepidoptera - moth	<i>Mesoleuca albicillata</i>	Beautiful Carpet			NW declining	Woodlands-Hedgerows-Trees	Woodlands-Hedgerows-Trees
Lepidoptera - moth	<i>Pelurga comitata</i>	Dark Spinach		UK BAP-Section41	NMRS Atlas - VU	Woodlands-Hedgerows-Trees	Woodlands-Hedgerows-Trees
Lepidoptera - moth	<i>Entephria caesiata</i>	Grey Mountain Carpet		UK BAP-Section41		Upland Moorland-Bogs-Heath	Upland Moorland-Bogs-Heath
Lepidoptera - moth	<i>Hydriomena ruberata</i>	Ruddy Highflyer			NW declining	Lowland Wetlands-Mosslands-Ponds	Lowland Wetlands-Mosslands-Ponds
Lepidoptera - moth	<i>Cidaria fulvata</i>	Barred Yellow			NW declining	Woodlands-Hedgerows-Trees	Woodlands-Hedgerows-Trees
Lepidoptera - moth	<i>Electrophaes corylata</i>	Broken-barred Carpet			NW declining	Woodlands-Hedgerows-Trees	Woodlands-Hedgerows-Trees
Lepidoptera - moth	<i>Eulithis testata</i>	Chevron			NW declining	Upland Moorland-Bogs-Heath	Upland Moorland-Bogs-Heath
Lepidoptera - moth	<i>Eulithis populata</i>	Northern Spinach			NW declining	Grassland-Cropland	Grassland-Cropland
Lepidoptera - moth	<i>Eulithis mellinata</i>	Spinach		UK BAP-Section41	NMRS Atlas - VU	Woodlands-Hedgerows-Trees	Woodlands-Hedgerows-Trees
Lepidoptera - moth	<i>Dysstroma citrata</i>	Dark Marbled Carpet			NW declining	Upland Moorland-Bogs-Heath	Upland Moorland-Bogs-Heath

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Lepidoptera - moth	<i>Odezia atrata</i>	Chimney Sweeper			NW declining	Grassland-Cropland	Grassland-Cropland
Lepidoptera - moth	<i>Perizoma bifaciata</i>	Barred Rivulet			NW declining	Grassland-Cropland	Grassland-Cropland
Lepidoptera - moth	<i>Perizoma albulata</i>	Grass Rivulet			NW declining	Grassland-Cropland	Grassland-Cropland
Lepidoptera - moth	<i>Pasiphila debiliata</i>	Bilberry Pug		GB red data/list	Nationally Scarce	Upland Moorland-Bogs-Heath	Upland Moorland-Bogs-Heath
Lepidoptera - moth	<i>Eupithecia inturbata</i>	Maple Pug			NMRS Atlas - EN	Woodlands-Hedgerows-Trees	Woodlands-Hedgerows-Trees
Lepidoptera - moth	<i>Eupithecia linariata</i>	Toadflax Pug			NMRS Atlas - NT	Grassland-Cropland	Grassland-Cropland
Lepidoptera - moth	<i>Eupithecia pusillata</i>	Juniper Pug			NMRS Atlas - VU	Urban (inc gardens)	Urban (inc gardens)
Lepidoptera - moth	<i>Eupithecia tripunctaria</i>	White-spotted Pug			NMRS Atlas - NT	Woodlands-Hedgerows-Trees	Woodlands-Hedgerows-Trees
Lepidoptera - moth	<i>Eupithecia valerianata</i>	Valerian Pug		GB red data/list	Nb	Lowland Wetlands-Mosslands-Ponds	Lowland Wetlands-Mosslands-Ponds
Lepidoptera - moth	<i>Eupithecia icterata</i>	Tawny Speckled Pug			NMRS Atlas - NT	Grassland-Cropland	Grassland-Cropland
Lepidoptera - moth	<i>Eupithecia succenturiata</i>	Bordered Pug			NMRS Atlas - NT	Grassland-Cropland	Grassland-Cropland
Lepidoptera - moth	<i>Carsia sororiata</i>	Manchester Treble-bar		GB red data/list	Nb	Upland Moorland-Bogs-Heath	Upland Moorland-Bogs-Heath
Lepidoptera - moth	<i>Chesias legatella</i>	Streak		UK BAP-Section41		Woodlands-Hedgerows-Trees	Woodlands-Hedgerows-Trees

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Lepidoptera - moth	Macaria wauaria	V-Moth		UK BAP-Section41	NMRS Atlas - EN	Urban (inc gardens)	Urban (inc gardens)
Lepidoptera - moth	Ennomos quercinaria	August thorn		UK BAP-Section41		Woodlands-Hedgerows-Trees	Woodlands-Hedgerows-Trees
Lepidoptera - moth	Ennomos erosaria	September Thorn		UK BAP-Section41	NMRS Atlas - NT	Woodlands-Hedgerows-Trees	Woodlands-Hedgerows-Trees
Lepidoptera - moth	Theria primaria	Early Moth			NMRS Atlas - VU	Woodlands-Hedgerows-Trees	Woodlands-Hedgerows-Trees
Lepidoptera - moth	Dyscia fagaria	Grey Scalloped Bar			NMRS Atlas - NT	Upland Moorland-Bogs-Heath	Upland Moorland-Bogs-Heath
Lepidoptera - moth	Perconia strigillaria	Grass Wave			NW declining	Lowland Wetlands-Mosslands-Ponds	Lowland Wetlands-Mosslands-Ponds
Lepidoptera - moth	Parasemia plantaginis	Wood Tiger			NW declining	Upland Moorland-Bogs-Heath	Upland Moorland-Bogs-Heath
Lepidoptera - moth	Arctia caja	Garden Tiger		UK BAP-Section41	NMRS Atlas - NT	Grassland-Cropland	Grassland-Cropland
Lepidoptera - moth	Hypenodes humidalis	Marsh Oblique-barred		GB red data/list	Nb	Lowland Wetlands-Mosslands-Ponds	Lowland Wetlands-Mosslands-Ponds
Lepidoptera - moth	Parascotia fuliginaria	Waved Black		GB red data/list	Nb	Woodlands-Hedgerows-Trees	Woodlands-Hedgerows-Trees
Lepidoptera - moth	Diloba caeruleocephala	Figure of Eight		UK BAP-Section41	NMRS Atlas - EN	Woodlands-Hedgerows-Trees	Woodlands-Hedgerows-Trees

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Lepidoptera - moth	Acronicta menyanthidis	Light Knot-grass			NW declining	Upland Moorland-Bogs-Heath	Upland Moorland-Bogs-Heath
Lepidoptera - moth	Acronicta rumicis	Knot Grass		UK BAP-Section41		Grassland-Cropland	Grassland-Cropland
Lepidoptera - moth	Cucullia absinthii	Wormwood		GB red data/list	Nationally Scarce	Grassland-Cropland	Grassland-Cropland
Lepidoptera - moth	Cucullia umbratica	Shark			NW declining	Grassland-Cropland	Grassland-Cropland
Lepidoptera - moth	Stilbia anomala	Anomalous		UK BAP-Section41	NMRS Atlas - VU	Upland Moorland-Bogs-Heath	Upland Moorland-Bogs-Heath
Lepidoptera - moth	Amphipyra tragopoginis	Mouse Moth		UK BAP-Section41	NMRS Atlas - VU	GM Wide	GM Wide
Lepidoptera - moth	Allophytes oxyacanthae	Green-brindled Crescent		UK BAP-Section41		Woodlands-Hedgerows-Trees	Woodlands-Hedgerows-Trees
Lepidoptera - moth	Celaena haworthii	Haworth's Minor		UK BAP-Section41		Upland Moorland-Bogs-Heath	Upland Moorland-Bogs-Heath
Lepidoptera - moth	Gortyna flavago	Frosted Orange			NW declining	Grassland-Cropland	Grassland-Cropland
Lepidoptera - moth	Hydraecia petasitis	Butterbur		GB red data/list	Nationally Scarce	Lowland Wetlands-Mosslands-Ponds	Lowland Wetlands-Mosslands-Ponds
Lepidoptera - moth	Apamea lithoxylaea	Light Arches			NW declining	Grassland-Cropland	Grassland-Cropland
Lepidoptera - moth	Litoligia literosa	Rosy Minor		UK BAP-Section41	NMRS Atlas - NT	Grassland-Cropland	Grassland-Cropland
Lepidoptera - moth	Cirrhia gilvago	Dusky-lemon Sallow		UK BAP-Section41	NMRS Atlas - NT	Woodlands-Hedgerows-Trees	Woodlands-Hedgerows-Trees

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Lepidoptera - moth	Agrochola lychnidis	Beaded Chestnut			NMRS Atlas - NT	Grassland-Cropland	Grassland-Cropland
Lepidoptera - moth	Anchoscelis litura	Brown-spot Pinion		UK BAP-Section41	NMRS Atlas - NT	Grassland-Cropland	Grassland-Cropland
Lepidoptera - moth	Anchoscelis helvola	Flounced Chestnut		UK BAP-Section41		Upland Moorland-Bogs-Heath	Upland Moorland-Bogs-Heath
Lepidoptera - moth	Xylena solidaginis	Golden-rod Brindle		GB red data/list	Nationally Scarce	Upland Moorland-Bogs-Heath	Upland Moorland-Bogs-Heath
Lepidoptera - moth	Brachylomia viminalis	Minor Shoulder-knot		UK BAP-Section41	NMRS Atlas - NT	Lowland Wetlands-Mosslands-Ponds	Lowland Wetlands-Mosslands-Ponds
Lepidoptera - moth	Aporophyla lueneburgensis	Northern Deep-brown Dart			NW declining	Woodlands-Hedgerows-Trees	Woodlands-Hedgerows-Trees
Lepidoptera - moth	Dasypolia templi	Brindled Ochre		UK BAP-Section41	NMRS Atlas - NT	Upland Moorland-Bogs-Heath	Upland Moorland-Bogs-Heath
Lepidoptera - moth	Mniotype adusta	Dark Brocade		UK BAP-Section41		Upland Moorland-Bogs-Heath	Upland Moorland-Bogs-Heath
Lepidoptera - moth	Orthosia populeti	Lead-coloured Drab			NW declining	Woodlands-Hedgerows-Trees	Woodlands-Hedgerows-Trees
Lepidoptera - moth	Orthosia opima	Northern Drab			NW declining	Upland Moorland-Bogs-Heath	Upland Moorland-Bogs-Heath
Lepidoptera - moth	Tholera cespitis	Hedge Rustic		UK BAP-Section41	NMRS Atlas - VU	Grassland-Cropland	Grassland-Cropland
Lepidoptera - moth	Tholera decimalis	Feathered Gothic		UK BAP-Section41		Grassland-Cropland	Grassland-Cropland

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Lepidoptera - moth	Anarta myrtilli	Beautiful Yellow Underwing			NW declining	Upland Moorland-Bogs-Heath	Upland Moorland-Bogs-Heath
Lepidoptera - moth	Hecatera bicolorata	Broad-barred White			NMRS Atlas - NT	Urban (inc gardens)	Urban (inc gardens)
Lepidoptera - moth	Mythimna conigera	Brown-line Bright-eye			NW declining	Grassland-Cropland	Grassland-Cropland
Lepidoptera - moth	Euxoa nigricans	Garden Dart		UK BAP-Section41	NMRS Atlas - VU	Grassland-Cropland	Grassland-Cropland
Lepidoptera - moth	Diarsia dahlia	Barred Chestnut		UK BAP-Section41		Upland Moorland-Bogs-Heath	Upland Moorland-Bogs-Heath
Lepidoptera - moth	Rhyacia simulans	Dotted Rustic			NW declining	Grassland-Cropland Lowland Wetlands-Mosslands-Ponds Urban (inc gardens)	Grassland-Cropland
Lepidoptera - moth	Graphiphora augur	Double Dart		UK BAP-Section41	NMRS Atlas - NT	Lowland Wetlands-Mosslands-Ponds	Lowland Wetlands-Mosslands-Ponds
Lepidoptera - moth	Xestia castanea	Neglected Rustic		UK BAP-Section41		Upland Moorland-Bogs-Heath	Upland Moorland-Bogs-Heath
Lepidoptera - moth	Xestia agathina	Heath Rustic		UK BAP-Section41		Upland Moorland-Bogs-Heath	Upland Moorland-Bogs-Heath
Odonata	Aeshna isoceles	Norfolk Hawker	Endangered (EN)		Rare	Lowland Wetlands-Mosslands Rivers-Canals-Waterbodies	Lowland Wetlands-Mosslands
Odonata	Chalcolestes viridis	Willow Emerald Damselfly			Rare	Lowland Wetlands-Mosslands Rivers-Canals-Waterbodies	Lowland Wetlands-Mosslands

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Odonata	<i>Cordulegaster boltonii</i>	Golden-ringed Dragonfly			Rare	Upland Moorland-Bogs-Heath	Upland Moorland-Bogs-Heath
Odonata	<i>Erythromma najas</i>	Red-eyed Damselfly			Rare	Rivers-Canals-Waterbodies	Rivers-Canals-Waterbodies
Odonata	<i>Erythromma viridulum</i>	Small Red-eyed Damselfly			Rare	Rivers-Canals-Waterbodies	Rivers-Canals-Waterbodies
Odonata	<i>Orthetrum coerulescens</i>	Keeled Skimmer			Rare	Upland Moorland-Bogs-Heath	Upland Moorland-Bogs-Heath
Odonata	<i>Sympetrum sanguineum</i>	Ruddy Darter			Declining	Rivers-Canals-Waterbodies Lowland Wetlands-Mosslands	Lowland Wetlands-Mosslands
Odonata	<i>Sympetrum fonscolombii</i>	Red-veined Darter				Lowland Wetlands-Mosslands	Lowland Wetlands-Mosslands
Odonata	<i>Leucorrhinia dubia</i>	White-faced Darter	Endangered (EN)			Lowland Wetlands-Mosslands	Lowland Wetlands-Mosslands
Hymenoptera - bee	<i>Bombus bohemicus</i>	Gypsy/Ashton's cuckoo bee			Rare	Upland Moorland-Bogs-Heath Grassland-Cropland	Upland Moorland-Bogs-Heath
Hymenoptera - bee	<i>Bombus monticola</i>	Bilberry bumblebee			Uncommon indicator	Upland Moorland-Bogs-Heath Grassland-Cropland	Upland Moorland-Bogs-Heath
Hymenoptera - bee	<i>Bombus jonellus</i>	Heath bumblebee			Uncommon indicator	Upland Moorland-Bogs-Heath Grassland-Cropland Urban (inc gardens)	Upland Moorland-Bogs-Heath
Hymenoptera - bee	<i>Andrena ruficrus</i>	Northern mining bee		GB red data/list		Upland Moorland-Bogs-Heath	Upland Moorland-Bogs-Heath

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Hymenoptera - bee	<i>Andrena tarsata</i>	Tormentil mining bee		UK BAP-Section41		Upland Moorland-Bogs-Heath	Upland Moorland-Bogs-Heath
Hymenoptera - bee	<i>Colletes cunicularius</i>	Early Colletes		GB red data/list		Grassland-Cropland Upland Moorland-Bogs-Heath	Grassland-Cropland
Hymenoptera - bee	<i>Xylocopa violacea</i>	Violet carpenter bee			GM notable	Urban (inc gardens) Woodlands-Hedgerows-Trees	Urban (inc gardens)
Hymenoptera - bee	<i>Chelostoma florisomne</i>	Large scissor bee			GM notable	Woodlands-Hedgerows-Trees Grassland-Cropland	Woodlands-Hedgerows-Trees
Hymenoptera - bee	<i>Coelioxys elongata</i>	Dull-vented sharp-tailed bee			GM notable	Urban (inc gardens)	Urban (inc gardens)
Hymenoptera - bee	<i>Coelioxys inermis</i>	Shiny-vented sharp-tailed bee			GM notable	Urban (inc gardens)	Urban (inc gardens)
Hymenoptera - bee	<i>Andrena barbilabris</i>	Sandpit mining bee			GM notable	Grassland-Cropland	Grassland-Cropland
Hymenoptera - bee	<i>Andrena minutula</i>	Common mini miner			GM notable	Grassland-Cropland Woodlands-Hedgerows-Trees Urban (inc gardens)	Grassland-Cropland
Hymenoptera - bee	<i>Lasioglossum fratellum</i>	Smooth faced furrow bee			GM notable	Upland Moorland-Bogs-Heath Grassland-Cropland	Upland Moorland-Bogs-Heath
Hymenoptera - bee	<i>Lasioglossum leucopus</i>	White footed furrow bee			GM notable	GM Wide	GM Wide
Hymenoptera - bee	<i>Lasioglossum minutissimum</i>	Least furrow bee			GM notable	Grassland-Cropland Urban (inc gardens)	Grassland-Cropland
Hymenoptera - bee	<i>Sphecodes ephippius</i>	Bare saddled blood bee			GM notable	Upland Moorland-Bogs-Heath Woodlands-Hedgerows-Trees Grassland-Cropland	Upland Moorland-Bogs-Heath
Hymenoptera - bee	<i>Sphecodes puncticeps</i>	Sickle jawed blood bee			GM notable	GM Wide	GM Wide

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Hymenoptera - wasp	Dolichovespula saxonica	Saxon wasp		GB red data/list		Woodlands-Hedgerows-Trees Urban (inc gardens)	Urban (inc gardens)
Hymenoptera - wasp	Gorytes laticinctus			GB red data/list		Grassland-Cropland	Grassland-Cropland
Hymenoptera - wasp	Stigmus pendulus			GB red data/list		Urban (inc gardens) Woodlands-Hedgerows-Trees	Urban (inc gardens)
Hymenoptera - wasp	Vespula rufa	Red wasp			GM notable	Upland Moorland-Bogs-Heath Grassland-Cropland Urban (inc gardens)	Upland Moorland-Bogs-Heath
Hymenoptera - wasp	Dolichovespula media	Median wasp		GB red data/list	GM notable	Urban (inc gardens) Lowland Wetlands-Mosslands-Ponds	Urban (inc gardens)
Hymenoptera - wasp	Ancistrocerus oviventris				GM notable	GM Wide	GM Wide
Hymenoptera - wasp	Ancistrocerus nigricornis				GM notable	Urban (inc gardens) GM Wide	Urban (inc gardens)
Hymenoptera - wasp	Mimesa equestris				GM notable	Grassland-Cropland	Grassland-Cropland
Hymenoptera - wasp	Pemphredon inornata				GM notable	Woodlands-Hedgerows-Trees Urban (inc gardens)	Woodlands-Hedgerows-Trees
Hymenoptera - wasp	Psenulus pallipes				GM notable	Woodlands-Hedgerows-Trees GM Wide	Woodlands-Hedgerows-Trees
Hymenoptera - wasp	Cerceris rybyensis				GM notable	Grassland-Cropland	Grassland-Cropland
Hymenoptera - wasp	Cerceris arenaria				GM notable	Grassland-Cropland	Grassland-Cropland
Hymenoptera - wasp	Crossocerus dimidiatus				GM notable	GM Wide	GM Wide
Hymenoptera - wasp	Crossocerus leucostomus				GM rare	Woodlands-Hedgerows-Trees	Woodlands-Hedgerows-Trees

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Hymenoptera - wasp	Lindenius albilabris				GM notable	Grassland-Cropland	Grassland-Cropland
Hymenoptera - wasp	Oxybelus uniglumis				GM notable	Grassland-Cropland	Grassland-Cropland
Hymenoptera - wasp	Trypoxylon attenuatum				GM notable	Woodlands-Hedgerows-Trees Grassland-Cropland	Woodlands-Hedgerows-Trees
Hymenoptera - wasp	Argogorytes mystaceus				GM notable	Woodlands-Hedgerows-Trees	Woodlands-Hedgerows-Trees
Hymenoptera - wasp	Nysson spinosus				GM notable	Woodlands-Hedgerows-Trees	Woodlands-Hedgerows-Trees
Hymenoptera - wasp	Anoplius nigerrimus				GM notable	Grassland-Cropland Lowland Wetlands-Mosslands-Ponds	Grassland-Cropland
Hymenoptera - wasp	Priocnemis perturbator				GM notable	Woodlands-Hedgerows-Trees Grassland-Cropland	Woodlands-Hedgerows-Trees
Hymenoptera - wasp	Pseudomalus violaceus			GB red data/list	GM rare	Urban (inc gardens) Lowland Wetlands-Mosslands-Ponds	Urban (inc gardens)
Hymenoptera - wasp	Vespa crabro	European hornet			GM notable	Woodlands-Hedgerows-Trees Urban (inc gardens)	Woodlands-Hedgerows-Trees
Hymenoptera - brachonid	Rogas pulchripes			GB red data/list	GM sole UK record	Lowland Wetlands-Mosslands-Ponds	Lowland Wetlands-Mosslands-Ponds
Hymenoptera - ichneumonid	Agriotypus armatus				GM notable	Rivers-Canals-Waterbodies	Rivers-Canals-Waterbodies
Hymenoptera - ant	Formica fusca				GM notable	Woodlands-Hedgerows-Trees Upland Moorland-Bogs-Heath Urban (inc gardens)	Woodlands-Hedgerows-Trees

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Hymenoptera - ant	<i>Lasius flavus</i>	Yellow Meadow Ant			GM notable	Grassland-Cropland Urban (inc gardens)	Grassland-Cropland
Hymenoptera - ant	<i>Lasius mixtus</i>				GM notable	Grassland-Cropland	Grassland-Cropland
Hymenoptera - ant	<i>Lasius umbratus</i>				GM notable	Grassland-Cropland Woodlands-Hedgerows-Trees Urban (inc gardens)	GM Wide
Hymenoptera - ant	<i>Myrmica lobicornis</i>				GM notable	Upland Moorland-Bogs-Heath Grassland-Cropland	Upland Moorland-Bogs-Heath
Hymenoptera - ant	<i>Temnothorax nylanderi</i>				GM notable	Woodlands-Hedgerows-Trees	Woodlands-Hedgerows-Trees
Diptera	<i>Angioneura acerba</i>			GB red data/list		Lowland Wetlands-Mosslands	Lowland Wetlands-Mosslands
Diptera	<i>Anticheta obliviosa</i>		Vulnerable (VU)			Woodlands-Hedgerows-Trees Lowland Wetlands-Mosslands-Ponds	Woodlands-Hedgerows-Trees
Diptera	<i>Botanophila biciliaris</i>			GB red data/list		Lowland Wetlands-Mosslands	Lowland Wetlands-Mosslands
Diptera	<i>Clorismia rustica</i>	Southern silver stiletto-fly		UK BAP-Section41	Now Least Concern?	Rivers-Canals-Waterbodies	Rivers-Canals-Waterbodies
Diptera	<i>Ectinocera borealis</i>			GB red data/list		Woodlands-Hedgerows-Trees	Woodlands-Hedgerows-Trees
Diptera	<i>Erioptera verralli</i>			GB red data/list		Lowland Wetlands-Mosslands	Lowland Wetlands-Mosslands

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Diptera	<i>Fannia atripes</i>			GB red data/list		Woodlands-Hedgerows-Trees	Woodlands-Hedgerows-Trees
Diptera	<i>Gonomyia abbreviata</i>			GB red data/list		Rivers-Canals-Waterbodies Woodlands-Hedgerows-Trees	Rivers-Canals-Waterbodies
Diptera	<i>Helina pubescens</i>			GB red data/list		Woodlands-Hedgerows-Trees	Woodlands-Hedgerows-Trees
Diptera	<i>Hemyda vittata</i>		Vulnerable (VU)			Woodlands-Hedgerows-Trees	Woodlands-Hedgerows-Trees
Diptera	<i>Herina paludum</i>			GB red data/list		Grassland-Cropland	Grassland-Cropland
Diptera	<i>Heteromeringia nigrimana</i>			GB red data/list		Woodlands-Hedgerows-Trees	Woodlands-Hedgerows-Trees
Diptera	<i>Homoneura interstincta</i>			GB red data/list		Upland Moorland-Bogs-Heath	Upland Moorland-Bogs-Heath
Diptera	<i>Lispocephala brachialis</i>			GB red data/list		Woodlands-Hedgerows-Trees	Woodlands-Hedgerows-Trees
Diptera	<i>Nephrotoma crocata</i>			GB red data/list		Woodlands-Hedgerows-Trees	Woodlands-Hedgerows-Trees
Diptera	<i>Paradelphomyia ecalcarata</i>		Vulnerable (VU)			Woodlands-Hedgerows-Trees	Woodlands-Hedgerows-Trees
Diptera	<i>Phaonia canescens</i>			GB red data/list		Woodlands-Hedgerows-Trees	Woodlands-Hedgerows-Trees

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Diptera	Phryxe magnicornis			GB red data/list		Woodlands-Hedgerows-Trees	Woodlands-Hedgerows-Trees
Diptera	Phylidorea heterogyna		Endangered (EN)			Upland Moorland-Bogs-Heath	Upland Moorland-Bogs-Heath
Diptera	Prionocera subserricornis		Vulnerable (VU)			Lowland Wetlands-Mosslands-Ponds	Lowland Wetlands-Mosslands-Ponds
Diptera	Rhipidia uniseriata			GB red data/list		Woodlands-Hedgerows-Trees	Woodlands-Hedgerows-Trees
Diptera	Sargus cuprarius			GB red data/list		Woodlands-Hedgerows-Trees Grassland-Cropland	Woodlands-Hedgerows-Trees
Diptera	Scenopinus niger			GB red data/list		Woodlands-Hedgerows-Trees	Woodlands-Hedgerows-Trees
Diptera	Scleroprocta pentagonalis			GB red data/list		Woodlands-Hedgerows-Trees	Woodlands-Hedgerows-Trees
Diptera	Subclytia rotundiventris			GB red data/list		Woodlands-Hedgerows-Trees	Woodlands-Hedgerows-Trees
Diptera	Tipula grisea			GB red data/list		Upland Moorland-Bogs-Heath	Upland Moorland-Bogs-Heath
Diptera	Triogma trisulcata			GB red data/list		Upland Moorland-Bogs-Heath	Upland Moorland-Bogs-Heath
Diptera	Trypeta zoe		Endangered (EN)			Grassland-Cropland	Grassland-Cropland

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Coleoptera	Cryptocephalus decemmaculatus		Endangered (EN)	UK BAP-Section41		Lowland Wetlands-Mosslands	Lowland Wetlands-Mosslands
Coleoptera	Hydroporus longicornis		Near Threatened (NT)	GB red data/list		Lowland Wetlands-Mosslands	Lowland Wetlands-Mosslands
Coleoptera	Trinodes hirtus		Near Threatened (NT)	GB red data/list		Woodlands-Hedgerows-Trees	Woodlands-Hedgerows-Trees
Coleoptera	Helophorus tuberculatus		Vulnerable (VU)	GB red data/list		Lowland Wetlands-Mosslands Upland Moorland-Bogs-Heath	Upland Moorland-Bogs-Heath
Coleoptera	Atomaria puncticollis			GB red data/list		Woodlands-Hedgerows-Trees	Woodlands-Hedgerows-Trees
Coleoptera	Clambus pallidulus			GB red data/list		Woodlands-Hedgerows-Trees Lowland Wetlands-Mosslands	Lowland Wetlands-Mosslands
Coleoptera	Gracilia minuta			GB red data/list		Woodlands-Hedgerows-Trees	Woodlands-Hedgerows-Trees
Coleoptera	Hypopycna rufula			GB red data/list		Woodlands-Hedgerows-Trees	Woodlands-Hedgerows-Trees
Coleoptera	Plectrophloeus erichsoni			GB red data/list		Woodlands-Hedgerows-Trees Lowland Wetlands-Mosslands	Lowland Wetlands-Mosslands
Coleoptera	Orchestes testaceus			UK BAP-Section41		Woodlands-Hedgerows-Trees	Woodlands-Hedgerows-Trees
Hygrophila	Omphiscola glabra		Near Threatened (NT)	UK BAP-Section41		Lowland Wetlands-Mosslands	Lowland Wetlands-Mosslands

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Plecoptera	Rhabdiopteryx acuminata		Vulnerable (VU)	GB red data/list		Lowland Wetlands-Mosslands	Lowland Wetlands-Mosslands
Orthoptera	Metrioptera brachyptera	Bog Bush Cricket			GM scarce	Lowland Wetlands-Mosslands	Lowland Wetlands-Mosslands
Bony fish (Actinopterygii)	Anguilla anguilla	European Eel	Critically Endangered (CR)	UK BAP-Section41		Rivers-Canals-Waterbodies	Rivers-Canals-Waterbodies
Bony fish (Actinopterygii)	Cottus gobio	Bullhead		Habitat/Bird Dir		Rivers-Canals-Waterbodies	Rivers-Canals-Waterbodies
Bony fish (Actinopterygii)	Salmo salar	Atlantic Salmon	Endangered (EN)	UK BAP-Section41		Rivers-Canals-Waterbodies	Rivers-Canals-Waterbodies
Bony fish (Actinopterygii)	Salmo trutta	Brown/Sea Trout	Vulnerable (VU)	UK BAP-Section41		Rivers-Canals-Waterbodies	Rivers-Canals-Waterbodies
Bony fish (Actinopterygii)	Thymallus thymallus	Grayling		Habitat/Bird Dir		Rivers-Canals-Waterbodies	Rivers-Canals-Waterbodies
Bony fish (Actinopterygii)	Carassius carassius	Crucian carp			GM notable	Rivers-Canals-Waterbodies	Rivers-Canals-Waterbodies
Jawless fish (Agnatha)	Lampetra planeri	Brook Lamprey		Habitat/Bird Dir		Rivers-Canals-Waterbodies	Rivers-Canals-Waterbodies
Crustacean	Austropotamobius pallipes	White-clawed crayfish	Endangered (EN)	UK BAP-Section41		Rivers-Canals-Waterbodies	Rivers-Canals-Waterbodies
Fungus	Agrocybe elatella	Marsh Fieldcap	Near Threatened (NT)			Lowland Wetlands-Mosslands	Lowland Wetlands-Mosslands

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Fungus	<i>Boletus aereus</i>	Bronze Bolete	Near Threatened (NT)			Woodlands-Hedgerows-Trees	Woodlands-Hedgerows-Trees
Fungus	<i>Boletus moravicus</i>	Tawny Bolete	Vulnerable (VU)			Woodlands-Hedgerows-Trees	Woodlands-Hedgerows-Trees
Fungus	<i>Boletus bubalinus</i>	Ascot Hat				Woodlands-Hedgerows-Trees	Woodlands-Hedgerows-Trees
Fungus	<i>Boletus declivatum</i>					Woodlands-Hedgerows-Trees	Woodlands-Hedgerows-Trees
Fungus	<i>Cantharellus friesii</i>	Orange Chanterelle		UK BAP-Section41		Woodlands-Hedgerows-Trees	Woodlands-Hedgerows-Trees
Fungus	<i>Cotylidia pannosa</i>	Woolly Rosette		UK BAP-Section41		Woodlands-Hedgerows-Trees	Woodlands-Hedgerows-Trees
Fungus	<i>Hericium erinaceus</i>	Bearded tooth		UK BAP-Section41		Woodlands-Hedgerows-Trees	Woodlands-Hedgerows-Trees
Fungus	<i>Hygrophorus pudorinus</i>	Blushing Waxycap		UK BAP-Section41		Woodlands-Hedgerows-Trees	Woodlands-Hedgerows-Trees
Fungus	<i>Leccinum cyaneobasileucum</i>					Woodlands-Hedgerows-Trees	Woodlands-Hedgerows-Trees
Fungus	<i>Leccinum duriusculum</i>	Slate Bolete	Near Threatened (NT)			Woodlands-Hedgerows-Trees	Woodlands-Hedgerows-Trees
Fungus	<i>Porphyrellus porphyrosporus</i>	Dusky Bolete	Near Threatened (NT)			Woodlands-Hedgerows-Trees	Woodlands-Hedgerows-Trees

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Fungus	Rubinoboletus rubinus	Crimson Bolete	Vulnerable (VU)			Woodlands-Hedgerows-Trees	Woodlands-Hedgerows-Trees
Fungus	Cuphophyllus colemannianus	Toasted Waxcap	Vulnerable (VU)			Grassland-Cropland	Grassland-Cropland
Fungus	Cuphophyllus flavipes	Yellow Foot Waxcap	Vulnerable (VU)			Grassland-Cropland	Grassland-Cropland
Fungus	Cuphophyllus lepidopus	Scalyfoot Waxcap	Vulnerable (VU)			Grassland-Cropland	Grassland-Cropland
Fungus	Cuphophyllus lacmus	Grey Waxcap	Vulnerable (VU)			Grassland-Cropland	Grassland-Cropland
Fungus	Cuphophyllus radiatus	Slender Waxcap	Vulnerable (VU)			Grassland-Cropland	Grassland-Cropland
Fungus	Gliophorus reginae	Jubilee Waxcap	Vulnerable (VU)			Grassland-Cropland	Grassland-Cropland
Fungus	Gloioxanthomyces vitellinus	Glistening Waxcap	Endangered (EN)			Grassland-Cropland	Grassland-Cropland
Fungus	Hygrocybe citrinovirens	Citrine Waxcap	Vulnerable (VU)			Grassland-Cropland	Grassland-Cropland
Fungus	Hygrocybe coccineocrenata	Bog Waxcap	Near Threatened (NT)			Grassland-Cropland	Grassland-Cropland
Fungus	Hygrocybe helobia	Garlic Waxcap	Near Threatened (NT)			Grassland-Cropland	Grassland-Cropland
Fungus	Hygrocybe lepida	Goblet Waxcap	Vulnerable (VU)			Grassland-Cropland	Grassland-Cropland
Fungus	Hygrocybe mucronella	Bitter Waxcap	Vulnerable (VU)	UK BAP-Section41		Grassland-Cropland	Grassland-Cropland
Fungus	Hygrocybe punicea	Crimson Waxcap	Vulnerable (VU)			Grassland-Cropland	Grassland-Cropland
Fungus	Hygrocybe quieta	Oily Waxcap	Vulnerable (VU)			Grassland-Cropland	Grassland-Cropland

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Fungus	Hygrocybe splendidissima	Splendid Waxcap	Vulnerable (VU)			Grassland-Cropland	Grassland-Cropland
Fungus	Neohygrocybe nitrata	Nitrous Waxcap	Vulnerable (VU)			Grassland-Cropland	Grassland-Cropland
Fungus	Porpolomopsis calyptriformis	Pink Waxcap	Vulnerable (VU)			Grassland-Cropland	Grassland-Cropland
Fungus	Clavaria flavipes	Straw Club		GB red data/list		Grassland-Cropland	Grassland-Cropland
Fungus	Clavaria incarnata	Skinny Club		GB red data/list		Grassland-Cropland	Grassland-Cropland
Fungus	Clavaria zollingeri	Violet Coral	Vulnerable (VU)			Grassland-Cropland	Grassland-Cropland
Fungus	Entoloma porphyrophaeum	Lilac Pinkgill	Vulnerable (VU)			Grassland-Cropland	Grassland-Cropland
Fungus	Entoloma prunuloides	Mealy Pinkgill	Vulnerable (VU)	UK BAP-Section41		Grassland-Cropland	Grassland-Cropland
Fungus	Microglossum olivaceum	Olive Earthtongue		UK BAP-Section41		Grassland-Cropland	Grassland-Cropland
Fungus	Squamanita paradoxa	Powdercap strangler			Turn Slack clough	Grassland-Cropland	Grassland-Cropland
Fungus	Squamanita pearsonii				Only records in England	Grassland-Cropland	Grassland-Cropland
Fungus	Camarophyllopsis atrovelutina				Turn Slack clough	Woodlands-Hedgerows-Trees	Woodlands-Hedgerows-Trees
Lichen	Arrhenia peltigerina		Near Threatened (NT)			Woodlands-Hedgerows-Trees	Woodlands-Hedgerows-Trees
Lichen	Aspergillus glaucus		Near Threatened (NT)			Woodlands-Hedgerows-Trees	Woodlands-Hedgerows-Trees

Taxon Group	Scientific Name	Common Name(s)	Red List inclusion status (CR, EN, NT, VU)	Other list status IF applicable	Local significance	Habitat assemblages (choose all that apply)	Primary Habitat assemblage
Lichen	Cladonia portentosa			Habitat/Bird Dir		Woodlands-Hedgerows-Trees	Woodlands-Hedgerows-Trees
Lichen	Cladonia rangiferina			Habitat/Bird Dir		Woodlands-Hedgerows-Trees	Woodlands-Hedgerows-Trees
Lichen	Collema tenax		Near Threatened (NT)			Woodlands-Hedgerows-Trees	Woodlands-Hedgerows-Trees
Lichen	Fuscidea cyathoides		Near Threatened (NT)			Woodlands-Hedgerows-Trees	Woodlands-Hedgerows-Trees
Lichen	Polycoccum peltigerae		Near Threatened (NT)			Woodlands-Hedgerows-Trees	Woodlands-Hedgerows-Trees
Lichen	Stereocaulon dactylophyllum		Near Threatened (NT)			Woodlands-Hedgerows-Trees	Woodlands-Hedgerows-Trees
Lichen	Stereocaulon vesuvianum		Near Threatened (NT)			Woodlands-Hedgerows-Trees	Woodlands-Hedgerows-Trees
Lichen	Trichonectria hirta		Near Threatened (NT)			Woodlands-Hedgerows-Trees	Woodlands-Hedgerows-Trees
Vascular Plants	Anacamptis morio	Green-winged orchid	Near Threatened (NT)			Grassland-Cropland	Grassland-Cropland
Vascular Plants	Andromeda polifolia	Bog-Rosemary	Near Threatened (NT)			Lowland Wetlands-Mosslands	Lowland Wetlands-Mosslands
Vascular Plants	Briza media	Quaking-grass	Near Threatened (NT)			Grassland-Cropland	Grassland-Cropland

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Vascular Plants	Campanula rotundifolia	Harebell	Near Threatened (NT)			Grassland-Cropland	Grassland-Cropland
Vascular Plants	Carex echinata	Star Sedge	Near Threatened (NT)			Lowland Wetlands-Mosslands	Lowland Wetlands-Mosslands
Vascular Plants	Carex vesicaria	Bladder-Sedge	Vulnerable (VU)			Rivers-Canals-Waterbodies	Rivers-Canals-Waterbodies
Vascular Plants	Carlina vulgaris	Carline Thistle	Near Threatened (NT)			Grassland-Cropland	Grassland-Cropland
Vascular Plants	Drosera rotundifolia	Common Sundew	Near Threatened (NT)			Lowland Wetlands-Mosslands	Lowland Wetlands-Mosslands
Vascular Plants	Empetrum nigrum	Hermaphrodite Crowberry	Vulnerable (VU)			Upland Moorland-Bogs-Heath	Upland Moorland-Bogs-Heath
Vascular Plants	Epipactis palustris	Marsh Helleborine	Near Threatened (NT)			Upland Moorland-Bogs-Heath	Upland Moorland-Bogs-Heath
Vascular Plants	Erica cinerea	Bell Heather	Near Threatened (NT)			Upland Moorland-Bogs-Heath	Upland Moorland-Bogs-Heath
Vascular Plants	Erica tetralix	Cross-leaved Heath	Near Threatened (NT)			Upland Moorland-Bogs-Heath	Upland Moorland-Bogs-Heath
Vascular Plants	Galeopsis speciosa	Bee Hemp-Nettle	Vulnerable (VU)			Grassland-Cropland	Grassland-Cropland
Vascular Plants	Genista anglica	Petty Whin	Near Threatened (NT)			Lowland Wetlands-Mosslands	Lowland Wetlands-Mosslands

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Vascular Plants	<i>Gentiana pneumonanthe</i>	Marsh Gentian	Near Threatened (NT)			Lowland Wetlands-Mosslands	Lowland Wetlands-Mosslands
Vascular Plants	<i>Gentianella amarella</i>	Autumn Gentian	Near Threatened (NT)			Grassland-Cropland	Grassland-Cropland
Vascular Plants	<i>Geranium sanguineum</i>	Bloody Crane's-bill	Near Threatened (NT)			Grassland-Cropland	Grassland-Cropland
Vascular Plants	<i>Hottonia palustris</i>	Water-Violet	Vulnerable (VU)			Lowland Wetlands-Mosslands	Lowland Wetlands-Mosslands
Vascular Plants	<i>Hydrocharis morsus-ranae</i>	Frogbit	Vulnerable (VU)			Lowland Wetlands-Mosslands	Lowland Wetlands-Mosslands
Vascular Plants	<i>Hydrocotyle vulgaris</i>	Marsh Pennywort	Near Threatened (NT)			Lowland Wetlands-Mosslands	Lowland Wetlands-Mosslands
Vascular Plants	<i>Hypopitys monotropa</i>	Yellow bird's nest	Endangered (EN)			Woodlands-Hedgerows-Trees	Woodlands-Hedgerows-Trees
Vascular Plants	<i>Jacobaea aquatica</i>	Marsh Ragwort	Near Threatened (NT)			Lowland Wetlands-Mosslands	Lowland Wetlands-Mosslands
Vascular Plants	<i>Knautia arvensis</i>	Field Scabious	Near Threatened (NT)			Grassland-Cropland	Grassland-Cropland
Vascular Plants	<i>Lathyrus linifolius</i>	Bitter Vetch	Near Threatened (NT)			Grassland-Cropland	Grassland-Cropland
Vascular Plants	<i>Luronium natans</i>	Floating Water-plantain	Near Threatened (NT)			Rivers-Canals-Waterbodies	Rivers-Canals-Waterbodies

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Vascular Plants	<i>Lysimachia thyrsiflora</i>	Tufted Loosestrife	Critically Endangered (CR)			Woodlands-Hedgerows-Trees	Woodlands-Hedgerows-Trees
Vascular Plants	<i>Melampyrum pratense</i>	Common Cow-wheat	Near Threatened (NT)			Upland Moorland-Bogs-Heath	Upland Moorland-Bogs-Heath
Vascular Plants	<i>Myrica gale</i>	Bog Myrtle	Near Threatened (NT)			Lowland Wetlands-Mosslands	Lowland Wetlands-Mosslands
Vascular Plants	<i>Myriophyllum verticillatum</i>	Whorled Water-milfoil	Vulnerable (VU)			Rivers-Canals-Waterbodies	Rivers-Canals-Waterbodies
Vascular Plants	<i>Oxalis acetosella</i>	Wood-sorrel	Near Threatened (NT)			Woodlands-Hedgerows-Trees	Woodlands-Hedgerows-Trees
Vascular Plants	<i>Pedicularis sylvatica</i>	Lousewort	Vulnerable (VU)			Upland Moorland-Bogs-Heath	Upland Moorland-Bogs-Heath
Vascular Plants	<i>Plantago media</i>	Hoary Plantain	Near Threatened (NT)			Grassland-Cropland	Grassland-Cropland
Vascular Plants	<i>Populus nigra</i>	Black poplar			GM notable	Woodlands-Hedgerows-Trees	Woodlands-Hedgerows-Trees
Vascular Plants	<i>Potamogeton compressus</i>	Grass-wrack Pondweed	Endangered (EN)			Rivers-Canals-Waterbodies	Rivers-Canals-Waterbodies
Vascular Plants	<i>Pyrola rotundifolia</i>	Round-leaved Wintergreen	Near Threatened (NT)			Woodlands-Hedgerows-Trees	Woodlands-Hedgerows-Trees
Vascular Plants	<i>Ranunculus aquatilis</i>	Water-crowfoot			GM notable	Rivers-Canals-Waterbodies	Rivers-Canals-Waterbodies

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Vascular Plants	<i>Salix repens</i>	Creeping Willow	Near Threatened (NT)			Upland Moorland-Bogs-Heath	Upland Moorland-Bogs-Heath
Vascular Plants	<i>Stellaria nemorum</i>	Wood Stitchwort	Data Deficient (DD)			Woodlands-Hedgerows-Trees	Woodlands-Hedgerows-Trees
Vascular Plants	<i>Stratiotes aloides</i>	Water-soldier	Near Threatened (NT)			Rivers-Canals-Waterbodies	Rivers-Canals-Waterbodies
Vascular Plants	<i>Succisa pratensis</i>	Devil's-Bit Scabious	Near Threatened (NT)			Grassland-Cropland	Grassland-Cropland
Vascular Plants	<i>Trichophorum caespitosum</i>	Deergrass	Data Deficient (DD)			Upland Moorland-Bogs-Heath	Upland Moorland-Bogs-Heath
Vascular Plants	<i>Trollius europeaus</i>	Globe flower			GM notable	Upland Moorland-Bogs-Heath	Upland Moorland-Bogs-Heath
Vascular Plants	<i>Umbilicus rupestris</i>	Navelwort			Locally Scarce	Upland Moorland-Bogs-Heath	Upland Moorland-Bogs-Heath
Vascular Plants	<i>Valeriana dioica</i>	Marsh Valerian	Near Threatened (NT)			Upland Moorland-Bogs-Heath	Upland Moorland-Bogs-Heath
Vascular Plants	<i>Viola tricolor</i>	Wild Pansy	Near Threatened (NT)			Grassland-Cropland	Grassland-Cropland